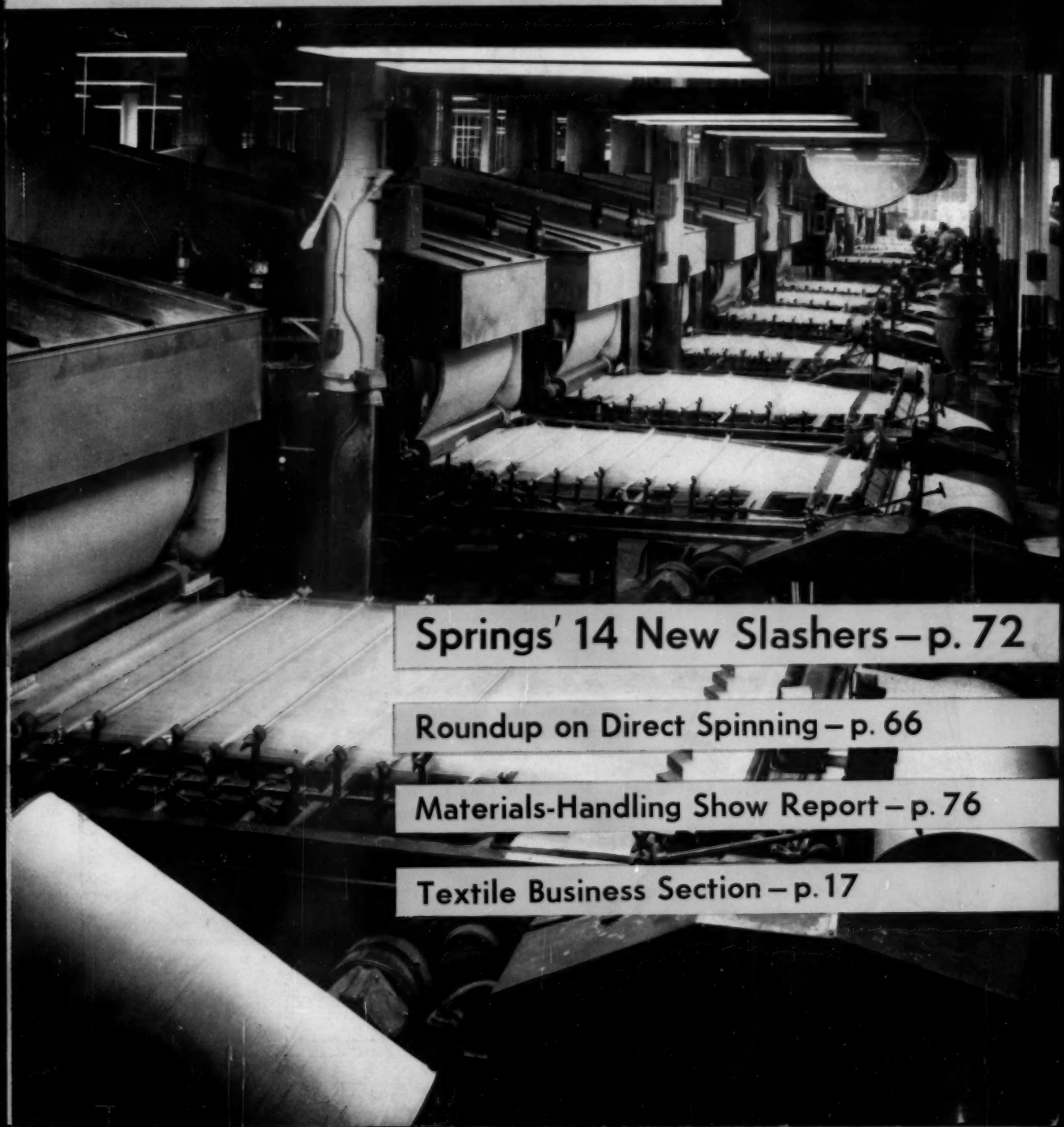
# Textile World

ULY, 1957

A McGRAW-HILL PUBLICATION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Roundup on Direct Spinning – p. 66

Materials-Handling Show Report – p. 76

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*It's clear to see—*

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Perma Fix-45 reduces color bleeding to a minimum, it increases fastness to high temperature washings.

It represents a new high in achievement of fast colors on synthetics.



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- **used in combination with resins and finishes**

**Dyers will like Perma Fix-45 for its EASY APPLICATION • QUALITY RESULTS • LOWER COSTS**

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The use of superior materials and new manufacturing methods make such shuttle life possible.

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Constructed of special phenolic laminated and macerated stocks, materials which have constant physical properties, *shuttle fittings stay in position* and a greater uniformity of product can be maintained.

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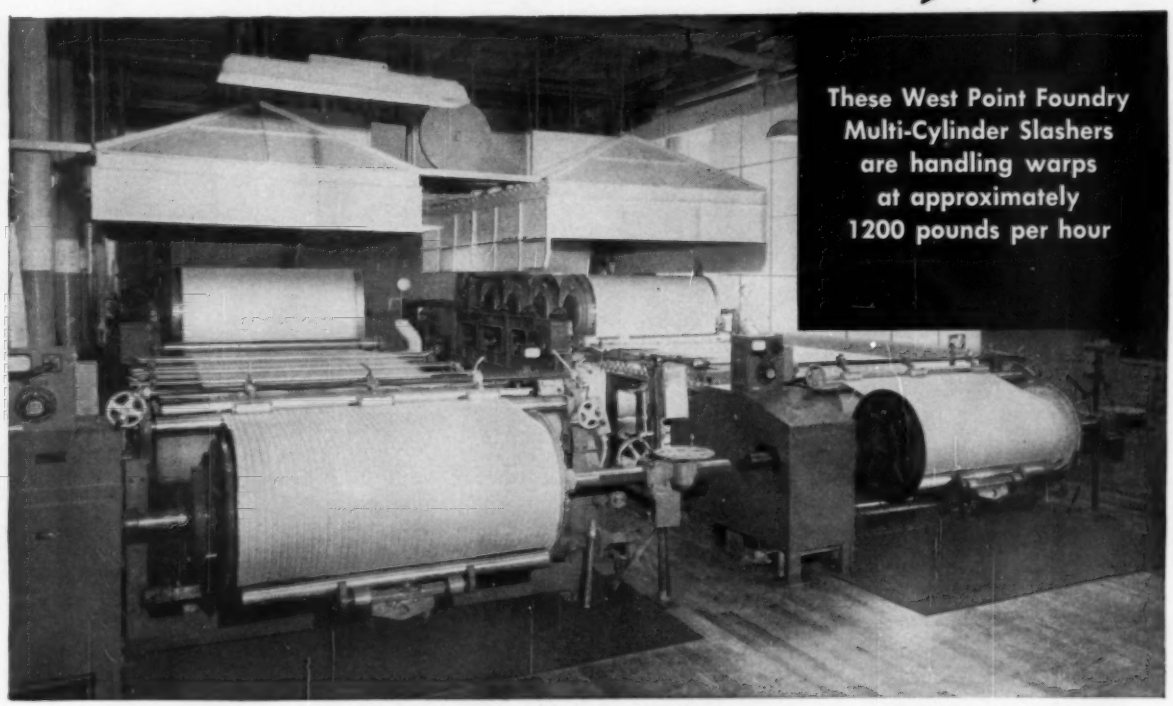
# Slash More Warp at Less Cost




That's a *typical* drying rate these high producing slashers are turning out in a Georgia mill of one of the largest textile organizations*—1240 pounds per hour, 5560 ends of 24's cotton at 75 yards per minute. In other mills West Point Foundry MULTI-CYLINDER slashers are slashing warps at speeds up to 230 yards per minute and drying rates of 2000 pounds per hour. That's *high production*—the reason why *four* West Point Foundry MULTI-CYLINDER slashers replaced seven of the old 3-cylinder slashers!

**Name furnished on request*

## Increase production...lower costs

**MULTI-CYLINDER SLASHERS** already in many mills have cut in half the number of slashers *and the floorspace* needed to handle a mill's production. And they continue to produce for years with dependable, high speed performance. They are built on heavy *machined* CAST IRON frames—built to take it! Another important advantage of the MULTI-CYLINDER SLASHER is its extreme versatility. It does an outstanding job on cotton, spun and filament synthetics. Teflon coating on entering cylinders makes it completely applicable to cotton. Multiple cylinders permit graduated temperature controls when required for synthetic warps. Superior *control of tension* throughout the slasher and *steam economy* are two more profit-making features. THIS SLASHER IS A MONEY-MAKER!

*Remember—you have a choice with West Point because West Point Foundry makes both MULTI-CYLINDER and AIR-DRI® Slashers.*

*For complete details, write*

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# Textile World

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Volume 107 Number 7


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### July

**38th Southern Industiral Relations Conference,** Blue Ridge, N. C., July 17 to 20.

### September

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 4.

**Fiber Society, Textile Institute, joint meeting,** Hotel Statler, Boston, Mass., 4 to 6.

**AATCC, Southeastern Section,** Harmony Club, Columbus, Ga., Sept. 14.

**Textile Quality Control Association, fall meeting,** Barrington Hotel, Charlotte, N. C., Sept. 19 & 20.

**AATCC, South Central Section,** Hotel Patton, Chattanooga, Tenn., Sept. 20.

**Northern Textile Association, annual meeting,** Wentworth By-The-Sea, Portsmouth, N. H., Sept. 25 & 26.

**Combed Yarn Spinners Association, annual meeting,** The Cloister, Sea Island, Ga., Sept. 26 & 27.

**AATCC, Delaware Valley Section, New York Section,** Trenton, N. J., Sept. 27.

**Carded Yarn Association, annual meeting,** The Cloister, Sea Island, Ga., Sept. 27 & 28.

**AATCC, Piedmont Section,** Hotel Barringer, Charlotte, N. C., Sept. 28.

**Textile Operating Executives of Georgia, fall meeting,** Hightower Textile Building, Georgia Institute of Technology, Atlanta, Ga., Sept. 28.

### October

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 2.

**Chemical Finishing Conference,** National Cotton Council of America, Statler Hotel, Washington, D. C., Oct. 2 & 3.

**Southern Textile Methods & Standards Association, fall meeting,** Clemson House, Clemson, S. C., Oct. 10 & 11.

**Alabama Textile Operating Executives, fall meeting,** Thach Auditorium, Auburn, Ala., Oct. 12.

**AATCC, Rhode Island Section,** Providence Engineering Society, Providence, R. I., Oct. 24.

**AATCC, Mid-West Section,** Bismark Hotel, Chicago, Ill., Oct. 26.

**National Industrial Packaging & Handling Exposition,** Convention Hall, Atlantic City, N. J., Oct. 28 to 31.

### November

**AATCC, Delaware Valley Section,** Shearton Hotel, Philadelphia, Pa., Nov. 1.

**AATCC, Western New England Section, annual meeting** Hartford, Conn. area, Nov. 1.

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 6.

**AATCC, national convention,** Hotel Statler, Boston, Mass., Nov. 14 to 16.

### December

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 4.

**AATCC, Rhode Island Section, annual meeting,** Providence, R. I., Dec. 5.

**AATCC, Delaware Valley Section,** Kugler's Restaurant, Philadelphia, Pa., Dec. 6.

**AATCC, Northern New England Section, annual meeting,** Hotel Continental, Cambridge, Mass., Dec. 6.

**AATCC, Southeastern Section,** Dinkler Plaza Hotel, Atlanta, Ga., Dec. 7.

**AATCC, Western New England Section,** Rapp's Restaurant, Shelton, Conn., Dec. 13.

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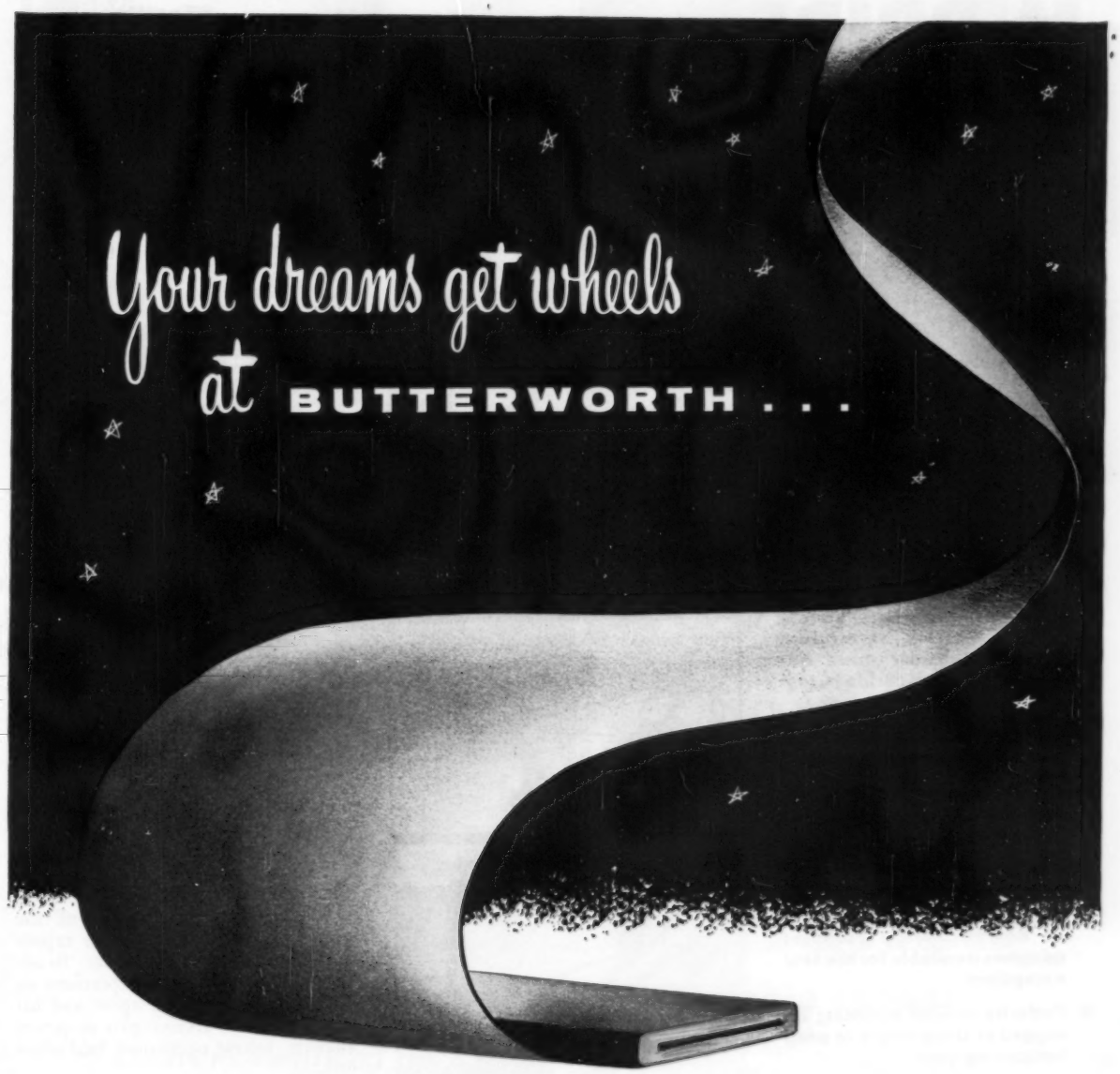


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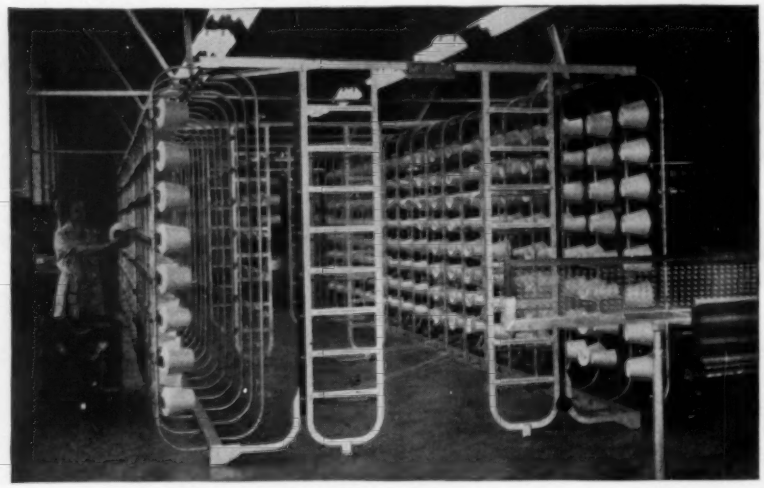
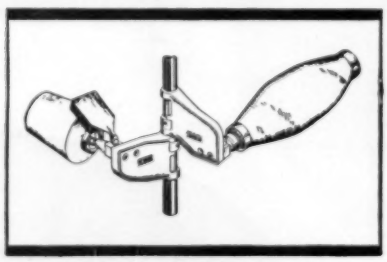
# McBRIDE CREEL CORNER

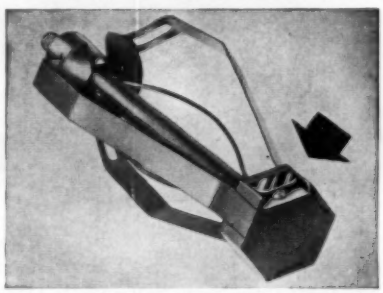


**Can your warp room handle the great variety of modern packages? Consider these advantages of a McBride Creel Swing Arm Assembly.**

- **Rugged construction for rigid support of heaviest packages.**
- **Readily swings out for package change, snaps back into locked position.**
- **Accommodation of most packages without special adapters by Quik-Change Cone Holder or Bowed Spring Spindle; adapters available for the few exceptions.**
- **Perfectly smooth surfaces; no ragged or sharp edges to snag ballooning yarn.**
- **Yarn won't fall off behind the package; self-adjusting, polyurethane Anti-Snagging Pad firmly but gently follows back edge of package during draw off.**



**McBride Swing Arm Assembly**



**McBride Quik-Change Cone Holder in position over Bowed Spring Spindle. Note spring thumb release; snaps back on.**

***We specialize in difficult warping problems. Ask us about yours.***

***CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION***

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## Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

### THE MILL PAYS FOR GIFTS AND KICKBACKS

Dear Editor:

I was much interested in your editorial, "An Old Evil," in the April issue. As you say, it is hard to place the blame for the practice of giving gifts to those influencing buying. But mills dealing with these Santa Claus salesmen pay for the gifts, and they are the ones that can stop it.

I know of a company that buys all its general mill supplies from a single supplier. This supplier gives all the overseers and superintendents expensive Christmas gifts every year. In addition, the production supervisors as well as the purchasing agent and his assistants often receive gifts of power mowers, fishing equipment, and other items.

But the mill pays for all these gifts in increased prices for general supplies. As an example, I once bought a 100-ft. drop cord from this supplier for $17. The drop cord was used in inspecting cloth at the loom and worked so well that a second hand in another room asked for one. Since it would be a week before the supply salesman returned, I asked the plant electrician if he could get one.

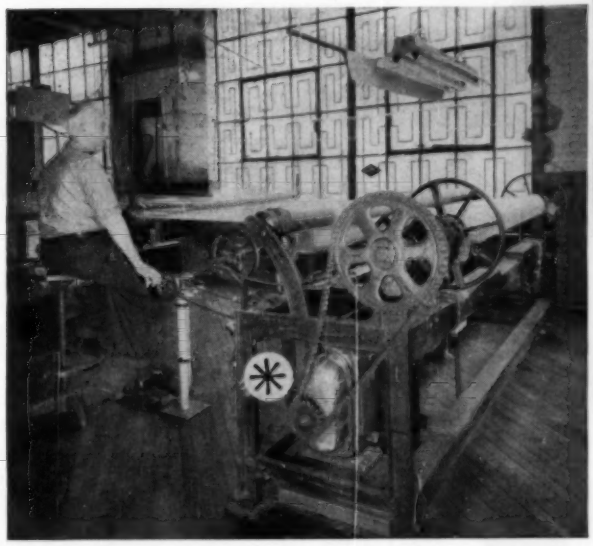
The electrician bought the wire and other component parts to assemble a drop cord identical to the first, and the total cost was only $4.

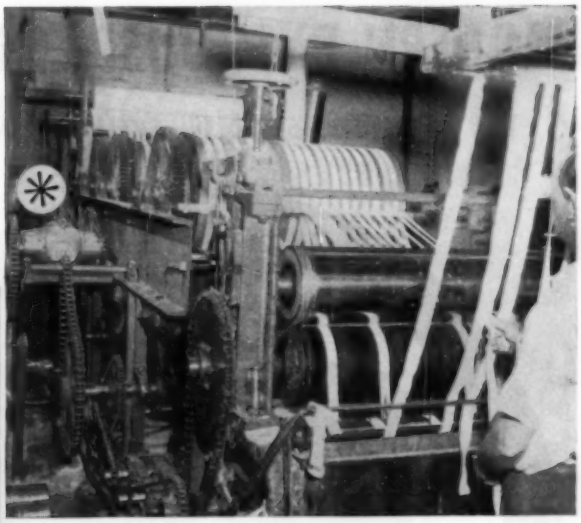
If mill management would watch the prices it is billed for many items and compare them with established prices of other suppliers, it could spot places where it is paying for gifts and kickbacks to its own men.

Don't waste sympathy on the poor

# Controlling stretch...

Fully-enclosed, self-lubricating P.I.V. provides proper stretch of elastic fabric drying on drums. Speed can be instantly varied within a ratio of 2 to 1 by turn of a hand wheel *while machine is operating.*





# ...or preventing it

P.I.V. fitted with remote mechanical control enables operator to quickly and conveniently change beaming speed as minutely as desired to suit quality, ply or strength of cotton yarn being wound.

# IT'S P.I.V. for exact regulation

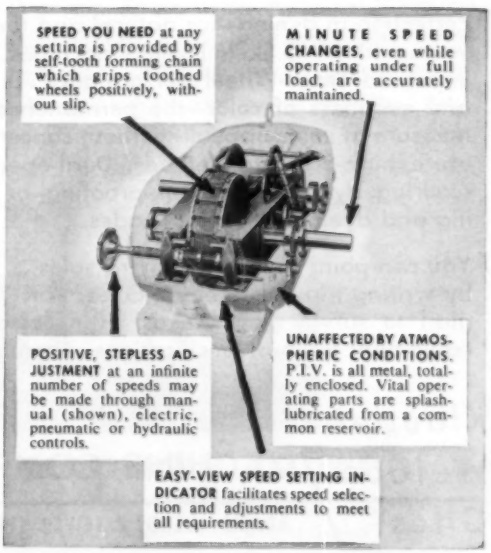
## at an infinite number of variable speeds

### *Delivers required hp from maximum to minimum settings*

SELECT your speed... set it... get it. Whether it's maximum or minimum, under full or light load, Link-Belt P.I.V. gives you positive, stepless changing — infinitely selective, effortless, precise.

There's no dependence on friction here. Instead, self-tooth-forming chain meshes with grooved wheels, delivering required speeds constantly, dependably.

Versatile P.I.V. drives are made in 8 sizes, 16 types, from ½ to 25 hp. Let your nearest Link-Belt office or authorized stock-carrying distributor know your needs or send for 88-page Data Book 2274.


SPEED YOU NEED at any setting is provided by self-tooth forming chain which grips toothed wheels positively, without slip.
MINUTE SPEED CHANGES, even while operating under full load, are accurately maintained.
POSITIVE, STEPLESS ADJUSTMENT at an infinite number of speeds may be made through manual (shown), electric, pneumatic or hydraulic controls.
UNAFFECTED BY ATMOSPHERIC CONDITIONS. P.I.V. is all metal, totally enclosed. Vital operating parts are splash-lubricated from a common reservoir.
EASY-VIEW SPEED SETTING INDICATOR facilitates speed selection and adjustments to meet all requirements.

LINK-BELT P.I.V. VARIABLE SPEED DRIVE

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,978



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# MODERN DYEHOUSE EQUIPMENT

## THE DEPENDABLE KWG SKEIN DYEING MACHINE

*KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.*

**FOR QUALITY DYEING**

**WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS**

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved **'Ferris-Wheel' performance . . . give you the penetration and evenness of color**—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY

**ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.**


salesman. He is not in business for pleasure. For every gift he hands out, he will collect tenfold. The one who actually pays for the gift racket is the consumer who has the cost tacked onto the price he pays for cloth.

H.B.W.

Greenville, S. C.

### HOW EFFICIENT ARE EFFICIENCY EXPERTS?

Dear Editor:

Nowadays when a department of a mill is not producing to expectation, the first thing that comes to the mind of management is to put an efficiency expert on the job. Whether called minute men, timestudy men, methods and standards men, or some other name, these so-called experts sometimes do more harm than good.

If the man is qualified for the job, that is, if he knows the machines and processes from A to Z, he can do much good. But there is a growing trend to put trainees and others with little practical experience on these jobs. These young fellows go around with a pad and pencil and must ask questions to get a lot of their information.

You can imagine how much misinformation they will get from weavers and others who figure that their jobs will be increased or their pay reduced as a result of the study. A qualified man wouldn't have to ask questions, and he could do much to avoid grievances by answering employees' questions concerning the study.

So it is my belief that the efficiency of the efficiency expert depends on his qualifications for the job and his experience with machines and people, not just on his ability as a timestudy man or job analyst alone.

O. J. Ducharme

Pascoag, R. I.

### PATENT EXAMINERS ARE NEEDED

Dear Editor:

The United States Patent Office is in need of engineers and scientists to serve as patent examiners. It takes about 10 months for a new patent application to be examined and an average of 3½ years before a patent is issued.

These delays create uncertainty as to the patent status of new products and processes. Industry is thus slowed down in adopting new products and introducing them to the public.

What is needed is more patent examiners. There are openings in all fields, but electrical engineers and electronic specialists are particularly

CONTINUED ON PAGE 12



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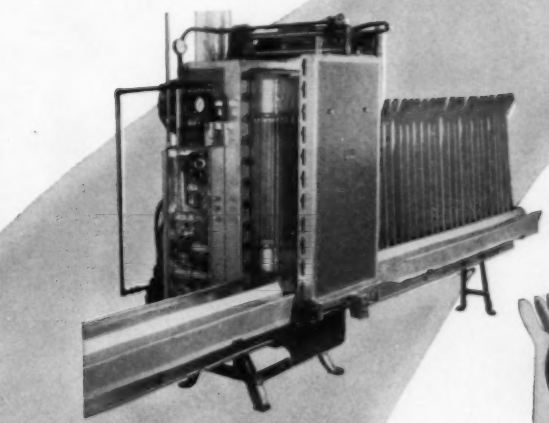
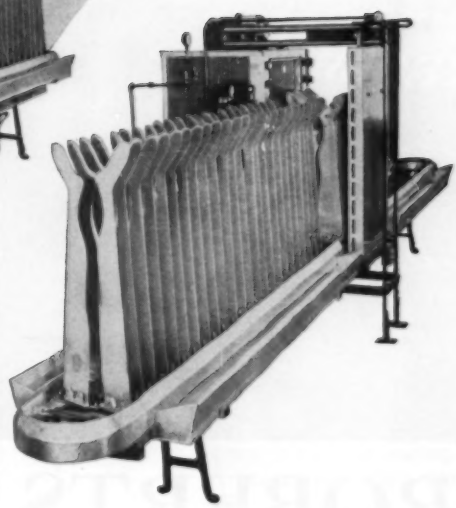
# Cut Heat-Setting Costs . . . With Push Buttons

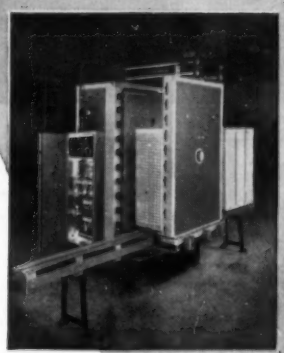




Above: Turbo ADS-48 Combination Preboarder/Finish Boarder, a single operator machine with 48 forms.

Right: Turbo ADS-96 Combination Preboarder/Finish Boarder, a two operator, double track machine with 96 forms . . . does the work of two preboarders and two finish boarders.

These hosiery setting machines with 4-cycle operation (preheating — air expulsion — steaming — drying) are designed for complete control of finishing according to the after-dyeing method of plasticizing all types of hosiery or garments.



Turbo FS-60 Fiber and Yarn Setter

Turbo FS-500 combination all-purpose Steam Setter adaptable to setting yarns, fibers, sweaters and other fabrics.

Turbo Setters feature automatic controls to assure high-quality results with every load. Available in stock machines or built to order.

Let Turbo push-button-controlled automatic machines help you get higher quality at lower cost. Temperatures, timing and production cycles are automatically regulated to take the guesswork out of heat setting. Dressing the forms or loading the carriers is the only manual labor involved. Socks, stockings, panties, briefs, sweaters, fabrics, yarns — in fact, anything that requires setting can be set-for-life, quickly and efficiently, on Turbo push-button-controlled machines. Ask for the 12-page Turbo Catalog, or write us about your special setting problem.

**TURBO**
SINCE 1929

**TURBO MACHINE COMPANY**
LANSDALE, PA.

*"Builders of Precision Machines for a Quarter Century"*



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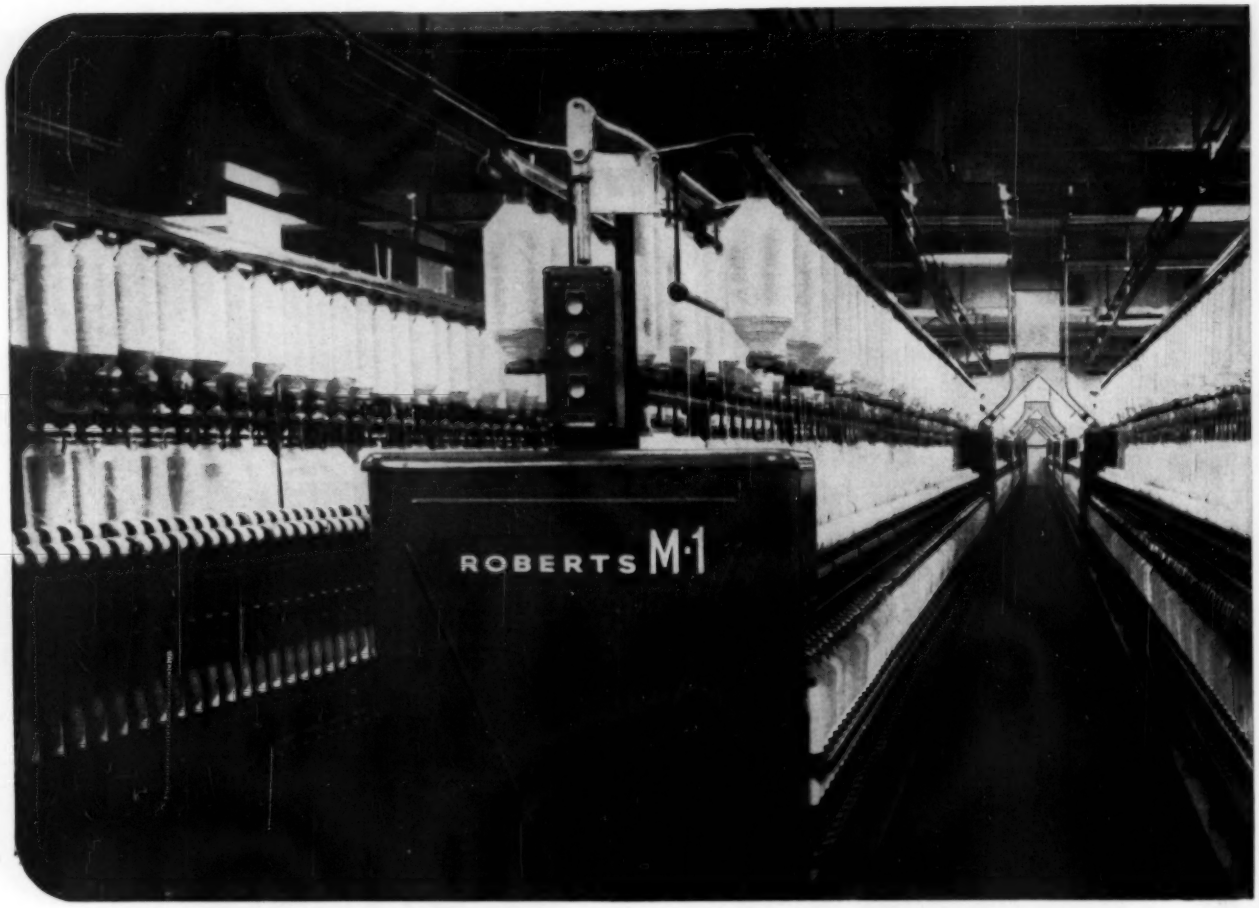


# ROBERTS SPINNING

## Today's standard for production, yarn quality and investment

Roberts Spinning is setting today's standard for comparison in high drafts, package sizes, roving bobbin sizes, front roll speeds, ends up, yarn break factor—and at the lowest investment cost per spindle.

**TRIED AND PROVEN.** The Roberts M-1 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. Its design has already been tried and proven in many successful applications. It embodies all the ball bearing features most wanted in a modern spinning frame, giving highest production and lowest maintenance.

**ROBERTS DRAFTING.** Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics with staples up to 3 inches long, or blends.

**LARGE PACKAGE FLEXIBILITY.** One basic model of the Roberts M-1 Spinning Frame is adapted to run warp bobbins with lengths from 10 inches to 12 inches as well as filling quills. Standard gauges from 3 inches to 4½ inches can be arranged to employ the maximum desirable ring size suitable for the yarn number and twist constant.

**RUGGEDNESS WITH SIMPLICITY.** The frame chassis is of rugged construction. The working motions use ball bearings for every turning and oscillating motion where practical. The all-ball-bearing head design is outstanding in its simplicity and flexibility. All gears in the head are hardened and have one pitch, one width, one bore and one keyway, making them completely interchangeable. Greased-for-life bearings are used in the head and all plain bearings and studs are eliminated. Draft and lay constants are adjusted simply over the complete range of yarn numbers.

**STANDARD FEATURES.** Standard equipment includes Roberts Ball Bearing Spindles, Roberts built-in UnitVac Suction Cleaning. Roberts AeroCreels are available in every desired package size, single or double.



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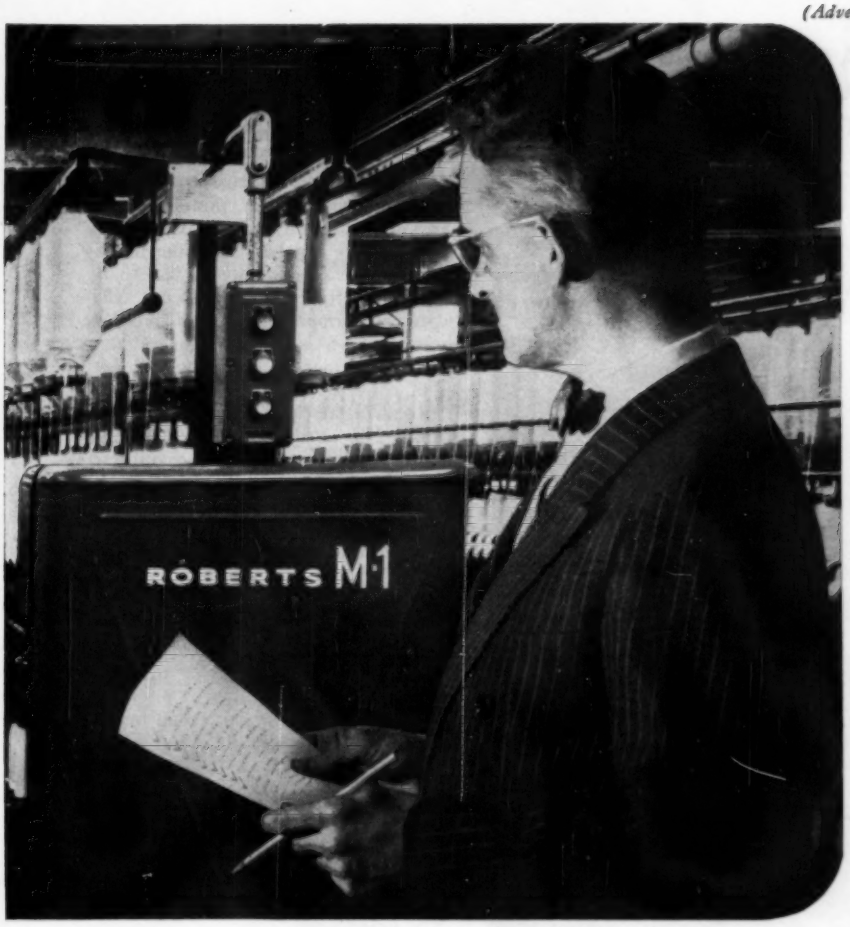
(Advertisement)




Part of a spinning room in a mill with over 100 Roberts 25-inch Spinning Frames.

## ROBERTS SPINNING AVAILABLE IN 3 FORMS PROVIDES MODERNIZATION AT LOWEST COST

The cost-cutting, performance, and quality features of Roberts Spinning can be obtained through changeovers to the mills' existing spinning frames, or through rebuilt frames supplied by Roberts, as well as Roberts M-1 Spinning Frames. Roberts Proposals for Spinning Modernization provide comparison on these 3 methods.

**CHANGEOVERS** to the mills' existing machinery can include drafting systems, spindles, creels, suction cleaning, tape drive, gearing, or any combination of these to provide the maximum return for minimum expenditures. Performance equal to new can be built into mills' existing machinery if desired in every manner and form.

**ROBERTS MODEL 55-R REBUILT FRAMES** provide complete new spinning performance making use only of non-functional support members of older frames, thus affecting a substantial savings and taking advantage of the all-new spinning performance and features identical to all-new frames.

**ROBERTS M-1 SPINNING FRAMES** are excitingly new from the ground up, with all ball bearing features. They are available in 39 inch, 36 inch, and the space-saving 25 inch widths.

**ROBERTS COMPANY**
SANFORD, NORTH CAROLINA

# ROBERTS SPINNING NEWS

### TOP ROLL SUSPENSION USES BALL BEARINGS IN ALL THREE LINES

The Roberts Ball Bearing Top Roll Suspension System uses double-row ball bearings in front, middle and back lines and incorporates many other important design advantages.

Cots have ½" hole diameter, revolve together making lap removal simpler, and are buffed on standard equipment, without attachments. Full length revolving clearers are used.

Front and back rolls are interchangeable making sequence buffing possible.

The double-row bearing raceways are ground directly into ½" shafts. Bearings are grease-packed for life and a 2-piece labyrinth seal protects them from lint entrance and roll picker damage.

The system has controlled self-alignment. Conventional deadweighting or new spring weighting is optional.

An alternate arrangement also available employs a ball bearing top roll and special suspension on the front line only with Roberts Cap Bars and solid top rolls on middle and back top rolls.

Roberts also continues to offer its No-Oil Cap Bar and Saddle system for all three lines, now installed in more than 2½ million spindles.

### ROBERTS M-1 SPINNING FRAMES MADE IN THREE WIDTHS

Where it is desirable to match frame widths already in the mill, Roberts makes and incorporates all of its design features of its new frames in standard 36 and 39 inch widths. All the ball bearing features and details are built into these wider frames.

The Roberts M-1 25 inch wide Spinning Frame permits 5 frames instead of 4 in a 25 foot mill bay, retaining 30-inch aisles and increasing yarn production 25% in the same place.

Creel designs have been arranged for the frames to handle 12 by 7 roving packages on as low as a 3-inch gauge frame. 10 by 5 double creels are designed for 3½ inch and larger gauges. In all cases, widths and heights of creel are not excessive with consideration being given for ease of creeling for the operators.

### ROBERTS "TURNKEY" ERECTION SERVICE

Roberts "Turnkey" Erection Service is available in all 3 modernization arrangements: buying complete new spinning frames, buying modernized frames, or changing over the frames on your floor. In each arrangement, Roberts is entirely responsible for installation and performance.



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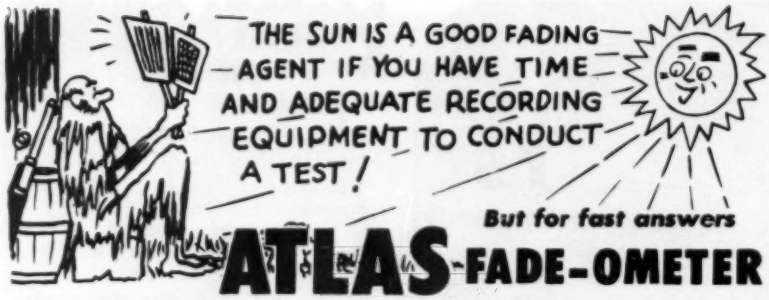



But for fast answers

ATLAS-FADE-OMETER

**Fade-Ometer** Used all over the world as the standard testing machine to determine the action of sunlight on materials. (Illustrated: Three Fade-Ometers in testing laboratory at Sears, Roebuck and Co.)

**Launder-Ometer** Standard testing machine of the A.A.T.C.C. for color-fastness and bleeding, shrinking, resistance to washing, testing dyes, soaps and detergents.

Test programs in these machines furnish reliable and the only accurate quick assessment of the degree of color fastness to sun light and resistance to washing and color bleeding.

Producers of soft goods can guarantee a specific colorfastness rating that adds considerably to the acceptance and saleability of a product.

Test programs can be duplicated at any time to give exact comparative data for product development formulas or in a production quality control program.

***Write for detailed information and personal service on your particular problem***

*Sales representatives in principal cities throughout the world*

**ATLAS ELECTRIC DEVICES COMPANY • 4114 N. Ravenswood Ave. • Chicago 13, Ill., U.S.A.**

WEATHER-OMETERS • FADE-OMETERS • LAUNDER-OMETERS


needed. Men and women with college degrees in engineering or applied science or a degree with a major in chemistry or physics are eligible for appointment as patent examiners.

The minimum starting salary of examiners is $4,480 per year. After only three months service, promotion to $5,335 per year can be expected. It is normal for a patent examiner to be earning $8,215 annually in less than five years after graduation from college, with opportunities for promotion up to $13,760 per year.

The shortage of patent examiners is of concern to all industry because it is slowing research and development work. The need should be given all possible publicity so that examiners can be recruited and the bottleneck eliminated.

HARRY E. SHARPE
New York Patent Law Assn.
New York, N. Y.

## SIFTING RESPONSIBILITIES

Dear Editor:

Mill management faces constantly expanding responsibilities, and there is always the threat that attention to detail will use up time and energy that should be saved for high-level decisions. To avoid this mistake, it is necessary to sift responsibilities regularly so that marginal tasks may be released to middle management or even lower levels.

What may have been a top-priority matter in the past need no longer be retained by top management now if (1) routines have been worked out so that someone further down the line

CONTINUED ON PAGE 178

## OUR COVER

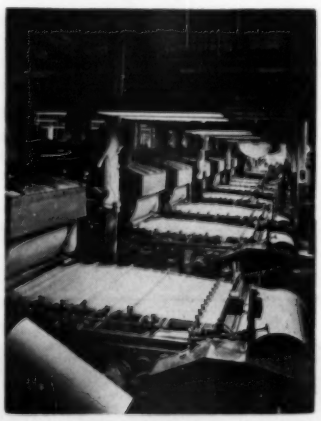
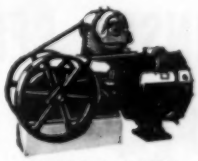


Photo by Coxe Studios
Greenville, S. C.

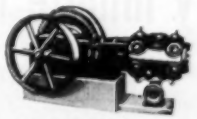
# Heavy-duty
# ES compressors

**provide maximum efficiency in a**
**WIDE RANGE OF APPLICATIONS**

*. . . with unusual flexibility of drive and cylinder arrangements*



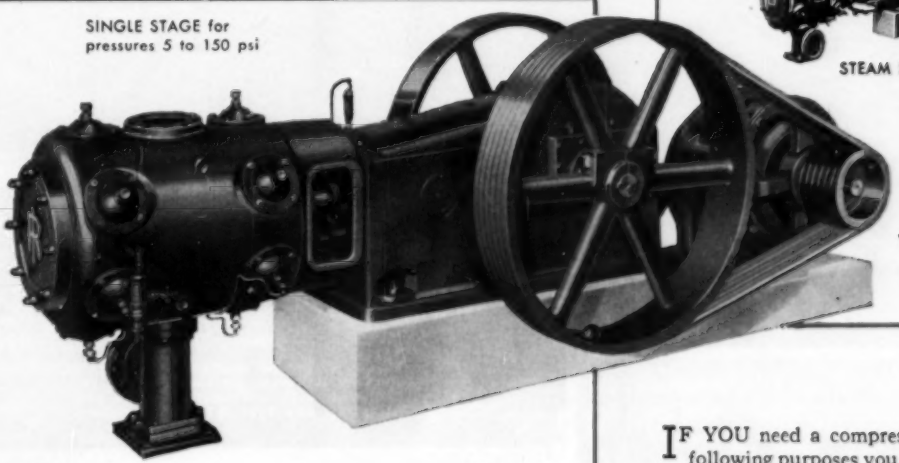
OVERHEAD MOTOR



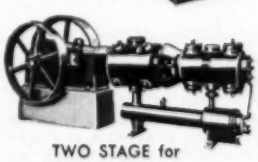
DIRECT-CONNECTED SYNCHRONOUS MOTOR

STEAM DRIVE

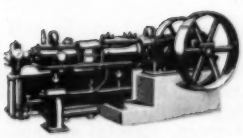
SINGLE STAGE for pressures 5 to 150 psi



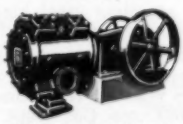
V-BELT DRIVE



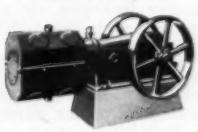
TWO STAGE for 150 to 500 psi



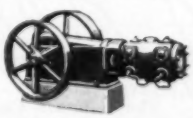
THREE STAGE for 500 to 2500 psi



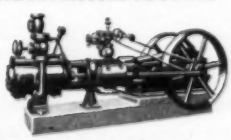
DRY VACUUM PUMPS . . . single or two stage



STEAM-PRESSURE BOOSTERS



NON-LUBRICATED CYLINDERS for oil-free air or gas



REFRIGERATION UNITS for ammonia or other refrigerants

IF YOU need a compressor for any of the following purposes you should consider the Type "ES" compressor . . . a standardized, yet extremely flexible compressor built by Ingersoll-Rand, the pioneer compressor builder.

- To compress air or gas to any pressures between 5 and 2500 psi, or for pulling vacuums. (Stock cylinders are normally available for all frame sizes, see illustrations.)
- For capacities requiring from 7½ to 150 horsepower. (Six frame sizes are available.)
- For continuous full-load operation day after day, week after week.
- For handling poisonous, inflammable, or other gases where leakage must be avoided.
- Where compressed air or gases must be free of all traces of oil. (Type NL cylinders require no oil, glycerine, grease or water for lubrication.)
- Where a future change in pressure conditions may call for a change in cylinder sizes.
- Where power cost is an important factor.
- To act as an economical standby unit for larger compressors whose full capacity is not required at all times.

**Ingersoll-Rand**
1-347 ♥ 11 Broadway, New York 4, N. Y.

COMPRESSORS • CONDENSERS • AIR & ELECTRIC TOOLS • TURBO BLOWERS • PUMPS • ROCK DRILLS • GAS & DIESEL ENGINES



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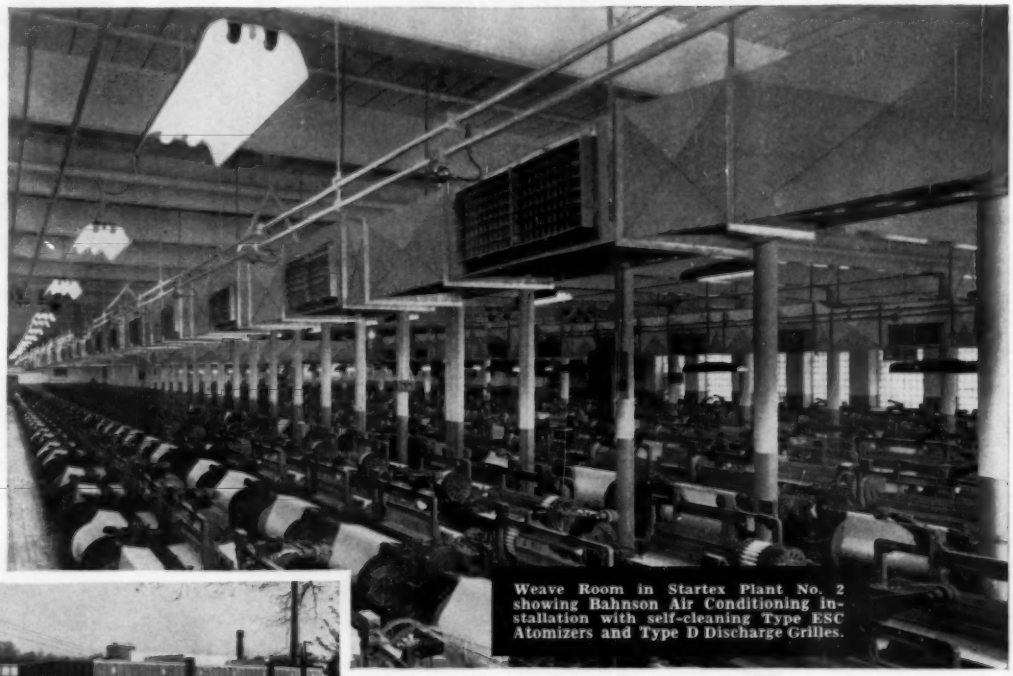
# BAHNSON CENTRAL STATION AIR CONDITIONING

## with capacity for more than a million cubic feet of air every minute installed at STARTEX® Mills



Weave Room in Startex Plant No. 2 showing Bahnson Air Conditioning installation with self-cleaning Type ESC Atomizers and Type D Discharge Grilles.

Exterior view of Startex plants at Startex, S. C.

"To air condition the plants of Startex Mills, Division of Spartan Mills, Spartanburg, S. C., our engineers designed a Central Station System with refrigeration and high quality components, built for long life and dependable service. Careful attention was given to Startex's requirements in each plant, in each room. Features such as Bahnson axial-flow fans and functional apparatus towers housing Bahnson air washers with stainless steel hinged eliminators help provide top performance and operating efficiency.

The Bahnson Company has the experience, know-how, and complete facilities to assist you with your air conditioning needs. Write me directly at the Bahnson Co., Dept. R, for full information. Ask for Bulletin 22A."

Agnew Bahnson Jr.
President
The Bahnson Company

*91 of the top 100*

Of the nation's top 100 textile mills 91 are users of Bahnson equipment

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING
HUMIDIFICATION
VACUUM COLLECTION
CLEANING
CREELS



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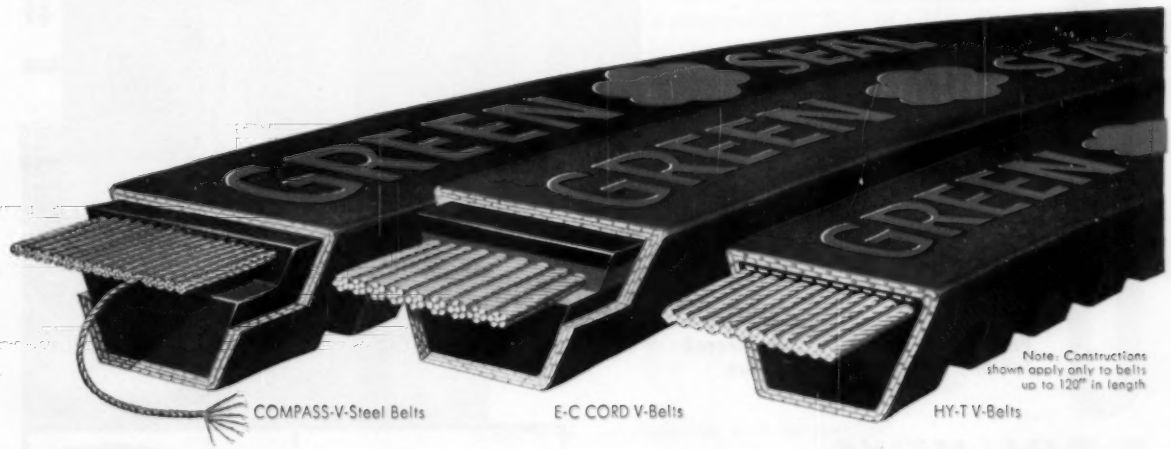
# Now—V-Belts with the Green Seal solve the major multiple drive problem




COMPASS-V-Steel Belts E-C CORD V-Belts HY-T V-Belts

Note: Constructions shown apply only to belts up to 120" in length

The Green Seal stands for true dimensional stability in V-belts. And with Green Seal dimensionally stable belts you can be sure that matched sets are truly matched and will stay matched—that mismatching (the biggest problem in belting multiple drives successfully) is a thing of the past.

The key to dimensional stability lies in the tension members of the belt. For many years, steel cables as developed by Goodyear were the only length stable load carriers, but now they have been joined by synthetic cords, thanks to the amazing Triple-Tempered 3-T process.

The 3-T process is an exclusive method of tempering the cord with Tension, Temperature and Time for maximum strength and minimum change in dimensions. This assures no change in length during storage plus greatly increased shock- and stretch-resistance on the drive.

The end result is smoother, longer-running teams of belts that give you maximum, trouble-free, horsepower hours at minimum cost. What better reason for specifying V-belts with the Green Seal?

**DIMENSIONALLY STABLE V-BELTS with the GREEN SEAL by GOODYEAR**

**THE GREATEST NAME IN RUBBER**

**The Goodyear Tire & Rubber Company, Industrial Products Division, Dept. 794, Akron 16, Ohio**

Please send me more information about how V-Belts with the Green Seal solve the major problem in belting multiple V-belt drives.

Name_____

Company_____

Street Address_____

City_____ Zone_____ State_____

Compass, E-C Cord, Hy-T, Green Seal T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio



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**PERFORMANCE**
records unsurpassed
. . . backed by millions of
spindles equipped.

**NEWEST**
and latest developments
are standard equipment
with Pneumafil.

**ECONOMICAL**
to operate . . . virtually no
maintenance costs—
a rugged piece of machinery.

**UNLIMITED**
types and arrangements of
Pneumafil systems . . . engineered
for any fiber or mill condition.

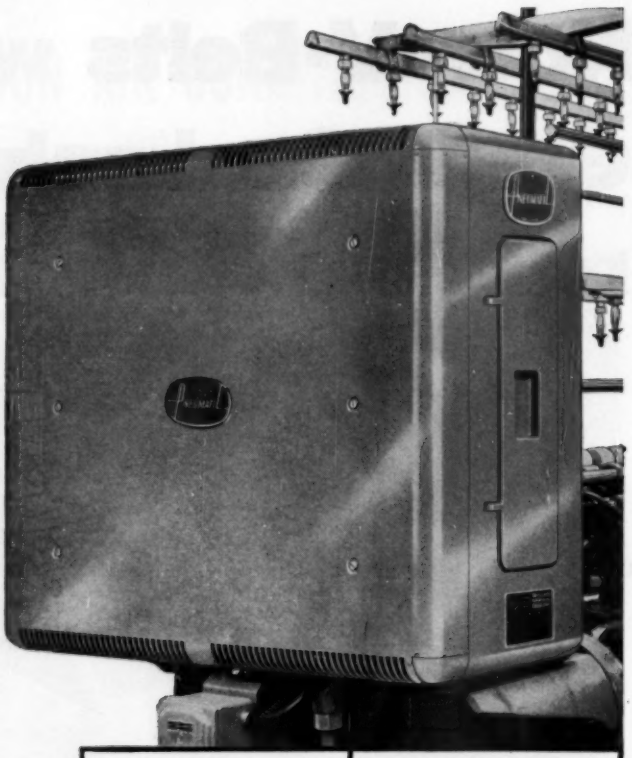
**MILL MEN'S**
practical ideas and valuable
suggestions are incorporated in
all Pneumafil equipment.

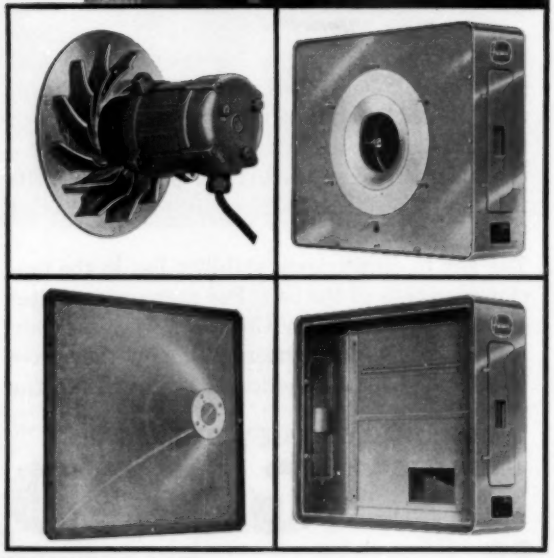
**ADVANCED STYLING**
and construction blends
in with today's modern
spinning processes.

**FEWER ENDS DOWN—**
Pneumafil's greater air quantity
keeps frames cleaner
and free of harmful waste.

**IMPROVED YARN QUALITY—**
Pneumafil's special "air flow"
pattern catches lint before
it becomes slubs.

**LOWER SPINNING COST—.**
Pneumafil's positive end pick-up and
superb cleaning means spinners can
operate more sides than ever before!





PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
Atlanta, Georgia — Needham Heights, Mass.

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# TEXTILE BUSINESS

Textile World

JULY • 1957

THIS MONTH'S HIGHLIGHTS

New Brakes on Mergers

•

Union Wins in Carpet Mills

•

Mill Spending Dips

•

Two-Price Cotton To Go

•

Wool Mills Puzzle ODM

•

Argentine Mills To Improve

•

Canada May Stop U. S. Dumping

# Supreme Court vs. Du Pont— New Brakes Put on Mergers

**The Supreme Court's crack-down early last month on the Du Pont-General Motors stock tie-up** may have far-reaching effects on textile business.

In a 4-2 decision, with three Justices abstaining, the Court ruled that Du Pont's ownership of 23% of GM's stock (63-million shares worth $2.5-billion) violates the antitrust laws. A lower court will determine what Du Pont must do to correct the situation.

**Key to the decision was that the stock tie-up lessens competition** and gives Du Pont a protected position in supplying GM. With several directors on the GM board, Du Pont was charged with selling GM two-thirds of its paint and nearly half of its automotive fabrics.

Because GM is such a big factor in U. S. automobile production, Du Pont therefore had "a substantial share" of the domestic "paint and fabric market."

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**Effects of the decision will be twofold:**

• The GM market for fabrics and tire cord will be thrown open.

• Vertical merging of textile organizations henceforth will be watched as closely as horizontal merging has been in the past.

The market for automotive fabrics, tire cord, and chafer fabrics is big. Official figures are not available, but checks with automobile manufacturers indicate that something like 100-million square yards of fabric and cord and chafer fabric for 25-million to 30-million original-equipment tires will be used this year. With GM building about half the cars and Du Pont controlling nearly half of GM's textile needs, a considerable hunk of textile business will be opened to free-swinging competition.

But losing its protected position doesn't necessarily mean that Du Pont will also lose GM's business.

With or without a favored position, Du Pont is rough competition. GM represents a small share of its total business, and it is doing all right in markets where it has no ownership ties.

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**The wider effect of the Court's decision will be on past and future mergers.**

In general, textile men consider that antitrust action is not likely in the textile industry, partly because no one organization dominates the field.

That could prove to be head-in-the-sand reasoning. In its fight for market protection, the industry makes the point that over-all industry figures are misleading, that damage by imports must be judged on individual constructions such as velveteens, chambrays, etc.

**Therefore the industry itself has set the pattern that could lead to antitrust action.** Many mill organizations are dominant in one or more lines of textile products; Burlington in hosiery, Cone in denims, Bemis in cotton bags, for examples.

Domination itself is not subject to antitrust action; but with the present decision, vertical merging such as mills with suppliers or retailers will now be cracked down on by the Justice Department as horizontal merging has been up to now. Tie-ups made as far back as passage of the Clayton Act in 1914 may be investigated.

**Chances are slim that the antitrusters will reach down as far as textiles** until they have a go at the available bigger game. But a few other successes in cracking vertical mergers may make them ambitious.

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**The Du Pont action is in sharp contrast to recent action by two British fiber producers.**

At the time the U.S. Supreme Court was taking action to break up Du Pont's small approach to monopoly, 90% of the stockholders of British Celanese Ltd. voted to merge with Courtaulds Ltd. The merger will give the resulting company control of about 90% of the British synthetic-fiber market.

Since England has no antitrust laws similar to those of the U.S., the monopolistic merger will be permitted. According to reports, the merged company will be the world's biggest synthetic-fiber producer.

## Carpet-Mill Pattern—

# Fringe Benefits This Year; Wage Raises Next Year

**The Textile Workers Union of America (CIO-AFL) chalked up significant gains in Northern carpet and rug mills last month.**

In the pattern-setting contract at Mohasco's big plant at Amsterdam, N. Y., the union won substantial increases in fringe benefits for all the plant's 3,400 workers and a wage raise of 5¢ to 8¢ an hour for 176 employees to "equalize inequities."

**Improved fringe benefits include:** hospitalization up from $8 a day to $12 a day, surgery allowance up from $150 to $225, hospital extras up from $35 to $120, life insurance up from $1,000 to $1,250 with double indemnity added, and a seventh paid holiday (election day).

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**Wage raises given were:** 133 loomfixers, 5½¢ an hour; 6 pipeline service men, 5¢ an hour; 15 truck drivers, 7¢ an hour; and 22 miscellaneous employees, varying increases.

The contract runs for two years, but it may be reopened for wage negotiations in one year.

Last year, the carpet-mill pattern of settlement was a 6¢-an-hour raise across the board, plus 1½¢ to 8½¢ an hour to correct inequities. **Carpet and rug mills passed that increase on to consumers through a 3% increase.**

### Sales and Profits Rise At J. P. Stevens & Co.

**Operating reports for early 1957 continue to show improving results.**

In reports issued last month, J. P. Stevens & Co. showed substantial improvement in both sales and net profit over the same period last year.

For the quarter ending May 4, sales were up from 1956's $86,907,074 to $107,355,143 this year. Net profit was up from $1,791,270, equal to 45¢ a share, to $2,312,580, equal to 59¢ a share.

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**Collins & Aikman Corp.** reported that it will show a loss for the quarter ending May 31, but the disposition of its Bristol, R. I., plant will clear the way for a profit for fiscal 1957.

Last fiscal year C&A had a loss of $1,576,877 on sales of $45,366,581. The Bristol operation was responsible for $898,000 of the loss.

### Tufteds Show Rapid Growth

**Tufted textiles reached a value of almost $300-million last year**—up from $45-million in 1944. The increase from 1955 to 1956 was from $282-million to $297-million.

Most of the growth has been by floor covering, according to the Tufted Textile Manufacturing Association.

Tufted carpeting and rugs increased from 77.8-million square yards in 1955 to 83.5-million square yards last year.

### Drapery Style Season Extended

**Drapery styling will be reduced to once a year** instead of the traditional twice a year by Scranton Lace Co.

Reasons: to simplify inventory problems of retail stores and to divert the cost of restyling and changing inventory to merchandising. These costs run as high as 5% of seasonal sales.

No announcement has been made as to how much last month's settlements will increase mill costs or whether the increase will be passed on in higher prices.

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**Chances are good that they will be.**

Textile prices in general are on the rise, and the carpet and rug market is even better this year than it was last year when it hit an all-time high of $600-million.

Mohasco's first-quarter sales rose 1.8% this year over last year—from $28,262,000 to $28,780,000. James Lees's increase was a little better than Mohasco's and Bigelow-Sanford's not quite so good.

For the Mohawk division of Mohasco, for which the Amsterdam mill is the pattern-setter, the sales increase is holding up through the second quarter; and Francis I. Monahan, vice president, says the last half should be at least as good as the last half of 1956. If so, that will put the whole of 1957 ahead of last year.

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**Profits for most carpet and rug mills have been satisfactory,** although there have been a few losers in late years and in late months. Mohasco's profits rose from $158,000 in the first 1956 quarter to $1,231,000 in the first quarter this year. Bigelow-Sanford's rose from $409,000 to $417,000. Some mills that had deficits in the first quarter of last year came out of the red this year.

This level of sales and profits bolstered the bargaining hand of TWUA both last year and this year. Unless there is an unforeseen debacle by next June, it's almost certain that TWUA will reopen the contracts next year for a sizable wage increase.

# Mill Spending Down In Second and Third Quarters

**Mill expenditures for new plant and equipment** will dip in the second quarter and again in the third quarter. But unless the fourth quarter is a real dud, expenditures for the year will wind up somewhere between the $366-million spent in 1955 and the $465-million spent in 1956.

Actual expenditures for the first 1957 quarter were $111-million. Estimates by the Securities & Exchange Commission and the Dept. of Commerce place second-quarter spending at $102-million and third-quarter spending at $82-million.

**To equal 1955 for the year, fourth-quarter spending will need to hit only $71-million,** if these estimates are correct. In late years that would represent an extremely poor quarter.

To equal 1956 for the year, the fourth quarter would have to turn in a thumping $170-million. That's not likely.

A good guess is that fourth-quarter spending will at least equal third-quarter spending and probably exceed it by 10% or more. Third-quarter mill operations are expected to improve and fourth-quarter results to be even better. That normally sets the stage for a rise in mill spending.

### Blanket Sales Lag

**Blanket sales by mills** are running considerably below last year's sales, a partial check of mills making blankets shows.

Figures are not complete enough to represent total production, but inventories are serious enough that mill prices have dropped 5% to 7½% below prices a year ago on cotton and blended blankets.

Mills report some indications that inventories held by retailers are working off rapidly, and many orders are going directly to stores.

This condition usually presages a marked pickup in mill sales.

### "Seals of Approval" Proposed

**Textile products will carry more seals, tags, and riders** than ever if the present trend toward "seals of approval" proposed by two associations spreads.

The National Association of Hosiery Manufacturers and the Tufted Textile Manufacturing Association both propose to institute a program for selling "seals of approval" to manufacturers who maintain certain quality standards.

**The money collected** would be used to promote the seal program and, the associations hope, the products that carry the seals.

Objectives: to root out below-quality products and increase sales for the participating mills.

### Louise Mill To Close

**Amerotron Corp. will close its Louise mill** at Charlotte, N. C. Reason given: "adverse market conditions."

Between 300 and 400 workers will be affected.

Closing date was not announced, but it is thought that the mill will continue operating until the Fourth of July vacation closing. It is not expected to start up after the Fourth.

### Britain Protests Wool Tariff Rise

LONDON, ENGLAND—The British Board of Trade is protesting the rise in import duties on woolen cloth sold in the U. S.

**The U. S. announcement of a 14-million-pound trigger point** for increasing tariffs from 25% to 45% led quickly to a conference between British Foreign Secretary Selwyn Lloyd and U. S. Ambassador John Hay Whitney.

**Britain alone sold 9.6-million pounds** of woolen goods in the U. S. last year. With the total for the world placed at 14-million pounds, Britain sees little chance of increasing, or even maintaining, her exports to the U. S.

### German Machine Sales Rise

**Textile-machinery manufacturers in West Germany** sold $117.3-million worth of machinery last year. That's a $23.8-million (about 15%) increase over 1955 and a 209% increase over 1950.

About 58% of last year's production was exported. Exports were up 23% over 1955 and about 500% over 1950.

**Main importers of West German textile machinery** were France, Netherlands, Italy, Belgium, and Luxembourg. Overseas importers, mainly the U. S. and India, accounted for 27% of the total, or about $25-million.

### Stevens To Buy Forstmann

**J. P. Stevens & Co., Inc., became a stronger factor in the woolen and worsted field last month.**

Agreement was reached for Stevens to buy the capital stock of Forstmann Woolen Co. and Julius Forstmann & Co., Inc.

Both Stevens and Forstmann are big producers; and the acquisition will make Stevens one of the largest, if not the largest, wool spinner and weaver in the country.

**Forstmann will give Stevens an**

# Two-Price Cotton— One More Year of Life?

**Opposition to the two-price cotton system** started last year to increase cotton exports and reduce the cotton surplus is gathering strength.

Besides objections by the textile industry and the New York and New Orleans Cotton Exchanges, cotton producers are beginning to speak out against it.

**Main reason: the cost of the program (about $1-billion in two years)** looks vicious in a period when the country and Congress are in a mood for government economy.

U. S. cotton exports dropped to about 2.2-million bales a year before the price was lowered to world levels with the government picking up the tab. After the export-price change, the loss on the first 9,297,339 bales sold for export was $535-million, according to Secretary of Agriculture Benson. That amounted to about $58 of tax money a bale.

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**The loss this year is variously estimated, but most informed estimates are above $300-million.** CCC stocks now amount to about 2.6-million bales of 1955 cotton and 4-million bales of 1956 cotton. The loan rate was somewhat lower on this cotton than on earlier crops; so the loss may run about $50 a bale, a total of $330-million.

If the $153-million cost of the Soil Bank is added, the total cost of the two-price-cotton program in its two-year life will hit about $1,018-million.

**The textile industry's objection to the pricing system is:**

- U. S. mills are barred from buying foreign cotton and have no choice but to use U. S. cotton at the high government-supported domestic price.
- Foreign mills get U. S. cotton 20% to 30% cheaper than U. S. mills.
- As a result, U. S. mills are at a serious cost disadvantage in world textile markets and in the U. S. market where imports are a problem.

**Bills have been introduced in Congress to permit U. S. mills** to buy CCC cotton at export prices to use in goods intended for export. But nothing has come of them yet.

With shortcomings of the dual-pricing system showing up and influential elements of the cotton business voicing opposition, chances are that the system will be eliminated before the door is opened for U. S. mills to get in on the export-price deal.

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**No correction is likely to be in force before 1959.** Congress has already begun to hurry this session along, and it's almost certain that the legislators will not tackle such a hot potato this late in the session.

Come December, farmers will vote on acreage quotas for 1958 based on present legislation. And 1958 planting probably will be well under way before the next Congress can rewrite the laws.

**By that time, another $500-million or so will be added** to the

$1-billion loss already sustained. And by present indications, the 1958 Congress will be in a real economy and tax-cutting mood. Chances are therefore good that 1958 will wind up the life of the two-price system.

It is also likely that price support and acreage control will reverse directions.

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**Pressure is building up to lower the support price and increase acreage** to permit farmers to grow all the cotton that can be consumed in the U.S. and sold abroad. That will reduce the cost to the government and save the cotton program from getting the economy ax in a less-desirable way.

It will also reduce the price of cotton to U.S. mills and put cotton in a better competitive position with other fibers.

As some observers put it, "The new program should aim at moving cotton into consumption rather than into government warehouses." Many experts think now that some such program will be written by next year's Congress.

# Woolen and Worsted Mills Accomplish Little With ODM

**Woolen and worsted mills seem headed for little sympathy from their arguments before the Office of Defense Mobilization last month.**

Reason: they tried to blame too much on imports.

Actually it was not clear from their presentation exactly what they wanted.

The purpose of the hearing was to uncover facts about damage to mills by imports. Woolens and worsteds so far have not come under quota protection similar to the "voluntary-quota" agreement reached with Japan early this year for cotton goods [TEXTILE WORLD, Feb., p. 17].

**The only protection now in effect for woolens and worsteds** is the Geneva Agreement by which tariff rates rise from 25% to 45% when imports reach 5% of domestic production. The trigger point for this year was set last month at 14-million pounds. That point should be reached by late August or early September.

The hearing last month supposedly was to gain further protection, but the arguments presented seemed beamed more toward getting woolen and worsted manufacturing established as essential in case of war.

**A great deal of the arguments was concerned with the decline of spindles, looms, and mills** in late years. To many, the testimony sounded somewhat like someone telling an extremely hard luck story but not ever getting down to specifics about the help he wanted.

**What good a declaration of essentiality in case of war would do is not clear.**

CONTINUED ON PAGE 22

**additional 60,000 spindles and 500 looms.** Fabric lines added will include women's coatings, suitings, and dress goods and men's-wear fabrics.

In its present three woolen and worsted divisions, Stevens produces quality women's-wear and men's-wear worsted fabrics, quality specialty fabrics, and popular-priced men's-wear and women's-wear woolen fabrics.

Sales volume of the Forstmann mill was not announced, but it should be sufficient to raise Stevens's 1956 sales of $372.6-million well toward the $½-billion mark.

### Ford To Step Up Coated-Fabric Production

**Coated fabrics for use as headliners, door panels, and upholstery fabrics** will find a smaller market at Ford Motor Co. after next year.

Ford has bought a $1.45-million plant at Mt. Clemens, Mich., from Philco Corp. and will move its vinyl-products-manufacturing operation from Highland Park, Mich., to the new site.

**More manufacturing will be done,** but "a substantial portion" of its automotive fabrics will still be bought, Ford says.

Research and development work on automotive fabrics will also be concentrated at Mt. Clemens.

### Sweater Styles Shift

**Sweater styles are showing considerably more variety** this year than they have for several late seasons.

A bulky look and a furry look are swinging many sales away from the trim, soft lines that set the stage for strong surges by Orlon and cashmere.

Fur blends, shetland yarns, and such textured yarns as Ban-Lon and Tycora are figuring heavily in this year's sweaters. And wool is continuing the strong comeback it began a couple of seasons ago.

Imports in late years have run only 5% or so of U.S. production, and stiff tariffs now operate against imports over that amount. The decline in spindles and looms has been many times more than 5%.

It's obvious that if every yard of imports was cut off and woolen and worsted mills were declared essential they still would be little, if any, better off.

To have changed the course of woolen- and worsted-mill business would have required some positive action in the U.S. market itself, some form of subsidy. That unavoidably would have involved vast government stockpiling and ultimate disposal of the surplus.

**Essential or not, mills won't see that happen.** The two-price system now in effect to dispose of surplus cotton is proving to be a giant-size economic drain and is almost certain to be killed (p. 20).

Woolen and worsted mills can't muster political strength anywhere near equal to that of the cotton bloc. So they'll never be able to swing a stockpiling program that would have changed the course of their business for the last several years.

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**There's no mystery about the causes of the troubles that have hit woolen and worsted manufacturing.**

In a nutshell, modern technology caught up with obsolete operations at a time when other factors added to the distress. Competition by more-efficient equipment and labor, by other fibers, and by smart merchandisers closed the mills—not imports and not disregard for the importance of textiles.

Therefore the hearing before ODM last month is not likely to bear much fruit.

# Argentina Will Improve Its Textile Industry

BUENOS AIRES, ARGENTINA—Argentina's textile industry will share in the "new deal" under way to improve this country's financial and industrial structure.

Under new regulations announced late in May by the Treasury Minister, industries turning out products that are now imported by Argentina or products that may be exported will be allowed to re-equip through the use of foreign credits.

The purpose of the move is to improve Argentina's export-import balance.

**Here's how it will work for textile machinery:**

- All machinery for the manufacture of yarn, except wool and cotton yarn, may enter duty-free.
- Cotton-yarn and wool-yarn machinery and all equipment for dyeing, printing, and finishing will carry about a 50% duty (20 pesos for each $1 of value).
- Winders, combers, gassing installations, and auxiliary equipment will carry about a 100% duty (40 pesos for $1 of value).

**Machinery purchases will be channeled to the U.S. and other**

## Department-Store Sales Are up 2% This Year

**Department-store sales,** the most accurate indicator of textile sales to consumers, are running 2% ahead of last year.

In the 12 districts of the country for which sales are reported by the Federal Reserve Board, seven districts showed increases for the first five months of this year, two showed no change from 1956, and three registered declines of 1% or 2%.

**Best gains made were the 5% increase in the Richmond district,** the 4% increase in the New York district, and the 3% increase in the Chicago district.

Gains of 2% were made in the Boston, Philadelphia, and Minneapolis districts and 1% in the Atlanta district.

Sales were level with 1956 sales in the Kansas City and San Francisco districts and were below 1956 in the Cleveland, St. Louis, and Dallas districts.

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**Department-store sales reflect movement of apparel and home furnishings.** These two classes of textile goods represent about two-thirds of the total textile market, with fabrics for industrial uses accounting for the other one-third.

Market observers in the districts where sales are off for the year account for the dip in this way:

- **Cleveland** consumers don't have as much money to spend this year as last year. Two important income-generating industries in the Cleveland district, construction and steel, are suffering slumps this year. Construction is generally running 15% to 20% below a year ago, and steel mills are operating at about 86% of capacity.
- **St. Louis** sales have been held back partly by bad shopping weather and partly by reduced incomes. Excessive rains have delayed farming activity, construction, and metal-working to serve oil-well drilling.
- **Dallas-district** sales have felt the full brunt of a long run of bad weather. Rains, floods, and cyclones have been the rule for a considerable part of this year in this district. All

dollar-area countries as much as possible by credit regulations. The importer must show certified credit papers from the country of purchase stating the credit terms of the sale.

On transactions for U.S. machinery, the Argentine importer must pay 20% of the purchase price and have credit terms for at least eight years on the unpaid balance.

On machinery bought from Europe or Japan, a 20% down payment must be made and credit terms for the balance must extend over at least four years.

**No favor will be granted importers in obtaining foreign currency for the payments.** Currency must be bought on the free money market, where the dollar is currently selling for about 40 pesos.

Argentine importers will also operate in the face of a regulation favoring out-of-country investors. The machinery specified may enter the country duty-free if it represents foreign investment or repatriation of Argentine capital now held abroad.

# Canada May Stop Dumping by U. S. Mills

**U. S. mills dumping textile goods in Canada** may soon bump into antidumping safeguards.

The political upset in Canada last month, which unseated the Liberal party after 22 years in power, turned the reins of government over to a Conservative party that traditionally has strongly favored high tariffs and antidumping measures.

**In the 265-seat House, the Conservatives now have 110 seats to the Liberals' 103.** They probably will not be able to manage a coalition to pick up the other 24 seats needed for firm control; but if they gain support and another election is held soon, a more decisive victory undoubtedly will spell the end to dumping.

In any case, a warning has been sounded that many Canadians are in a mood to reclaim Canadian markets and business.

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**The Canadian textile industry is not in a healthy state.** In a growing economy, mills in Canada have seen textile employment drop from 102,000 employees in 1951 to 82,000 now.

They have also seen U.S. imports multiply. In 1939, U.S. textile imports totaled $15.5-million. In 1955, they reached $114-million. By U. S. standards, that's not much. But in Canada, it's a fearsome total. Cotton and synthetics woven fabrics and knit goods of all kinds account for most of the imports.

**What makes imports from the U.S. so bad is the dumping angle,** Canadian mill men say. Most of the goods are sold in big quantities at prices well below both the U.S. price and the Canadian price. The result is that mill prices in Canada are subject to violent fluctuations, mostly on the downside.

The Liberal government turned a deaf ear to pleas for protection against U.S. dumping. If the Conservatives increase their majority, they'll be much more sympathetic to the foreign-competition problems of mills.

business activity—farming, oil-well drilling, construction, retail sales, etc.—has suffered.

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**A strong feeling of optimism prevails in most department stores** in other Federal Reserve districts. Most stores look for sales during the rest of the year to remain above the 1956 level.

Generally, stores report some improvement in profits. Some wryly admit that the better profits come primarily from the willingness of textile mills and garment manufacturers to trim prices to get their business. In most cases, the lower prices were not passed on to consumers.

Current firming and raising of prices at the mill level may trim store profits or force price increases. With sales holding up well, price increases are likely.

### Wool Handling up At Charleston Port

**Wool imports handled through the port at Charleston, S. C.,** will hit a new high this year. By the middle of last month imports had already topped the volume for all of 1956.

The record for late years is:

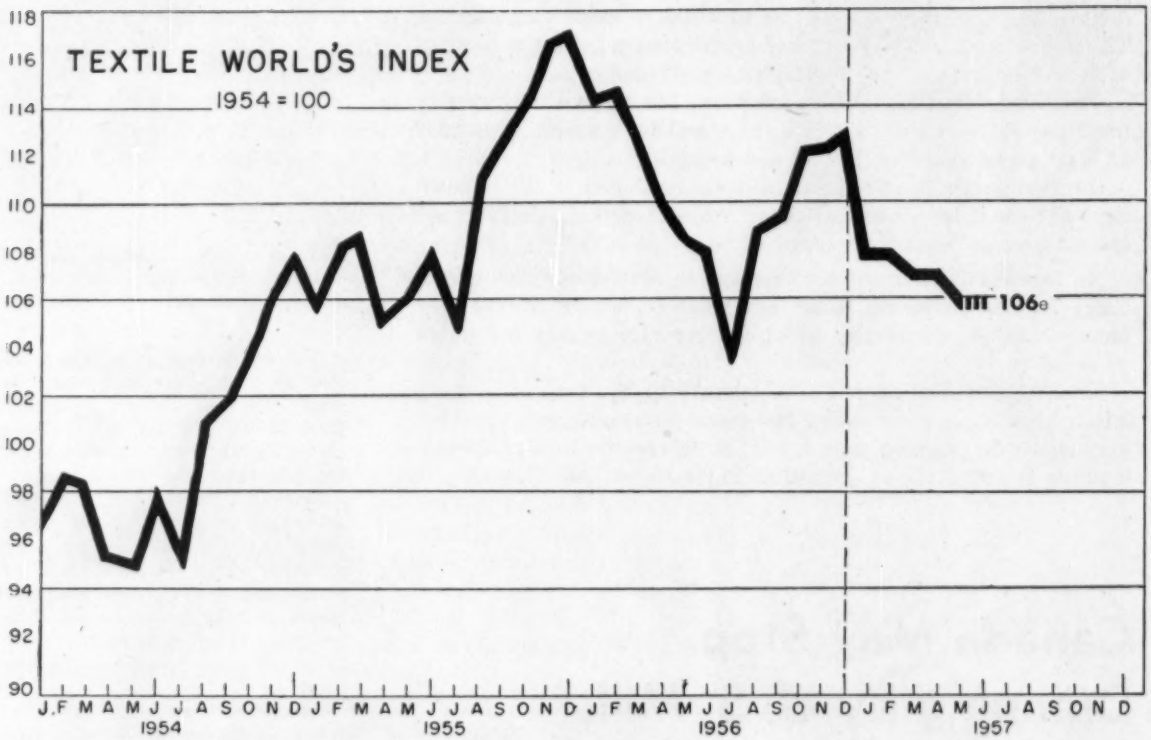
1954—17,500 (bales)
1955—51,000
1956—58,177
1957 (5½ mos.)—58,915

### Glass-Fiber Curtains up

**Fiberglas curtains took a big spurt upward last year.**

From 750,000 pairs in 1954 and 1-million pairs in 1955, they jumped to 5-million pairs last year.

Chief reasons for their popularity: they wash easily and require no ironing, good styling to justify price, and effective promotion. Besides the easy-wash and no-ironing features, promotion stresses long life and lasting whiteness.




Index of manhours worked in the textile industry adjusted for changes in productivity

# Textile World's Monthly Indicators

| | Latest Month | Previous Month | Year Ago |
|---|---|---|---|
| **Textile World's Index (1954 = 100)** | **106** | **106** | **108** |
| Employment (thousands) B.L.S. | 1001.3 | 1012.2 | 1061.2 |
| Production Workers (thousands) B.L.S. | 910.0 | 920.3 | 968.9 |
| Weekly Earnings B.L.S. | $57.60 | $57.90 | $56.16 |
| Hourly Earnings B.L.S. | $1.50 | $1.50 | $1.44 |
| Weekly Hours Worked B.L.S. | 38.4 | 38.6 | 39.0 |
| Production Index (1947–1949 = 100) F.R.B. | 99 | 106 | 108 |
| Wholesale Price Index (1947–1949 = 100) B.L.S. | 95.4 | 95.3 | 94.9 |
| Manufacturers' Sales (million $) Commerce | 1,112 | 1,118 | 1,123 |
| Manufacturers' Inventories (million $) Commerce | 2,578 | 2,618 | 2,492 |
| Inventories to Sales Ratio | 2.32 | 2.34 | 2.22 |
| Exports (Million $) Commerce | 196.6 | 175.1 | 109.9 |
| Imports (Million $) Commerce | 92.7 | 77.2 | 88.2 |
| Stock Price Index (1941–43 = 10) Standard & Poor's | 21.61 | 21.56 | 24.71 |
| Failures (number) Dun and Bradstreet | 8 | 7 | 9 |

# National Economic Indicators

| | Latest Month | Previous Month | Year Ago |
|---|---|---|---|
| Industrial Production (1947–1949 = 100) F.R.B. | 143 | 144 | 141 |
| Consumer Prices (1947–1949 = 100) B.L.S. | 119.3 | 118.9 | 114.9 |
| Wholesale Prices (1947–1949 = 100) B.L.S. | 117.1 | 117.2 | 114.4 |
| Population (millions) Census | 167.9 | 167.7 | 164.9 |
| Unemployment (thousands) Census | 2.7 | 2.7 | 2.6 |
| Employment (millions) Census | 65.2 | 64.3 | 65.2 |
| Personal Income (billion $) Commerce | 340.4 | 339.3 | 322.8 |

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**Wellman Combing Company, Johnsonville, South Carolina**

This plant, the first wool processing plant in the Southeast, and owned by Nichols and Company, Inc. of Boston, the largest wool treatment concern in the country, recently went into production. It has a capacity of 20 million pounds of grease wool per year, and is planned for enlargement to four times that capacity.

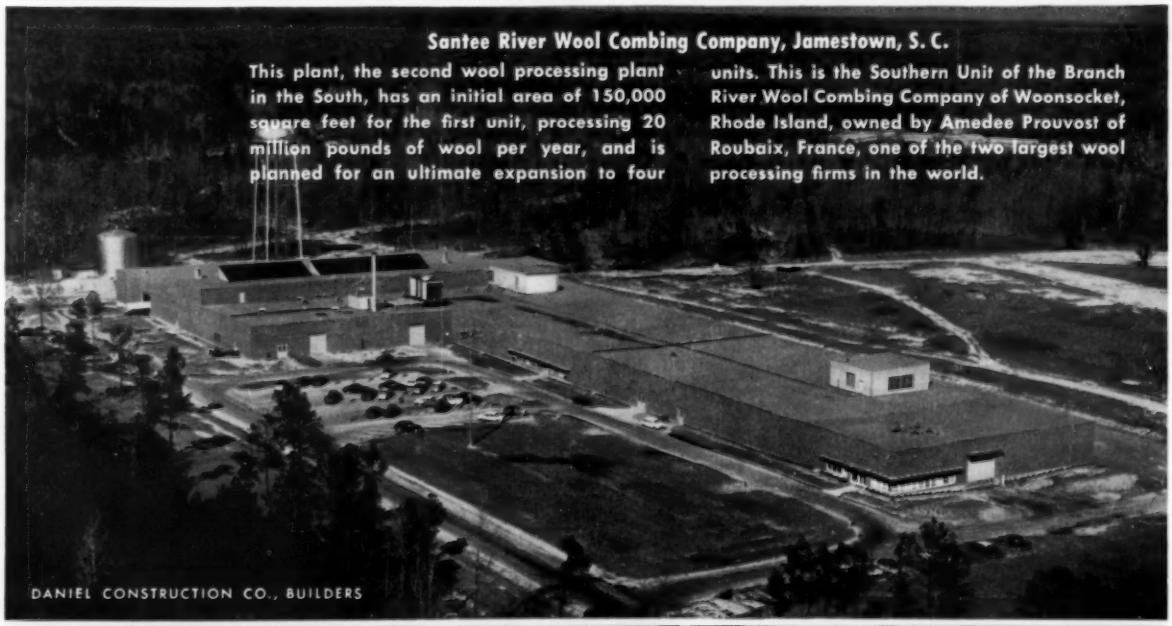
DANIEL CONSTRUCTION CO., BUILDERS

## LOCKWOOD GREENE PROJECTS IN . . . . . WOOL PROCESSING

Lockwood Greene's work, originating in 1832 with the design of textile mills, amounting to a present total of around one billion dollars in value, now includes the first two wool processing plants in the Southeast, here shown, for the world's two largest wool processing firms.

**Santee River Wool Combing Company, Jamestown, S. C.**

This plant, the second wool processing plant in the South, has an initial area of 150,000 square feet for the first unit, processing 20 million pounds of wool per year, and is planned for an ultimate expansion to four units. This is the Southern Unit of the Branch River Wool Combing Company of Woonsocket, Rhode Island, owned by Amedee Prouvost of Roubaix, France, one of the two largest wool processing firms in the world.



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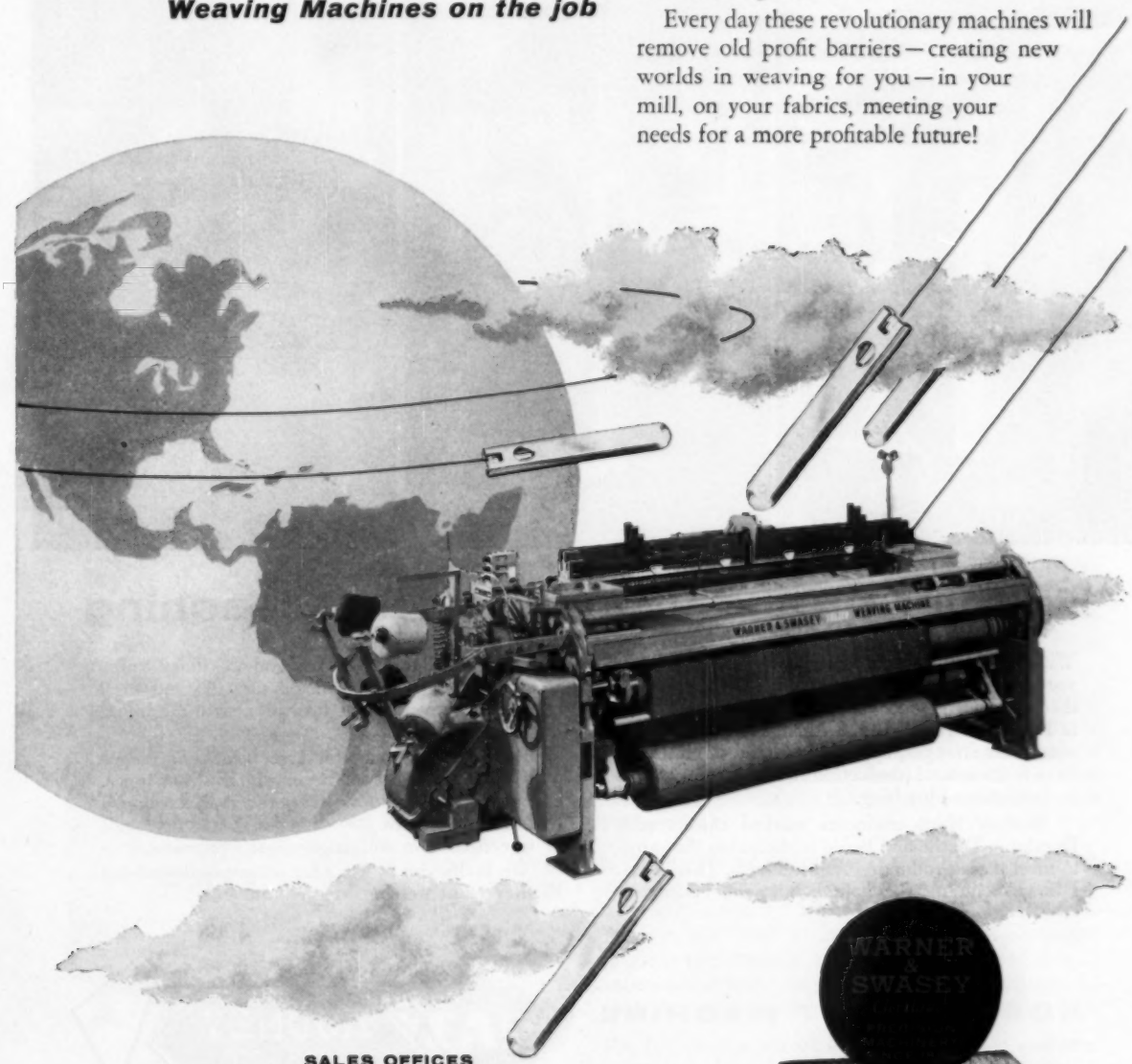
# NEW WORLDS IN WEAVING ARE YOURS

***when you put Warner & Swasey-Sulzer® Weaving Machines on the job***

In mill after mill—weaving worsteds, woolens, spun synthetics, blends and specialties such as paper—Warner & Swasey-Sulzer Weaving Machines are setting new standards of production and efficiency! They're so much *faster*. Every second, four shuttles speed the yarn across the machine—at 240 picks per minute! These shuttles draw directly from large packages, eliminating all the problems of conventional bobbin-shuttle operation. Available with Filling Mix Unit for blends and sharkskins, they weave *better quality*, more lofty fabrics—drastically cut burling and mending costs.

Every day these revolutionary machines will remove old profit barriers—creating new worlds in weaving for you—in your mill, on your fabrics, meeting your needs for a more profitable future!




**SALES OFFICES**

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass.
121 11th Street, N.E., Atlanta 3, Ga. • 624 Pecan Avenue, Charlotte 1, N.C.
Suburban Square Bldg., Ardmore (Philadelphia), Pa.

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

® Reg. U. S. Pat. Off.

**YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY**



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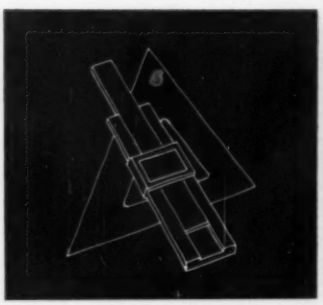

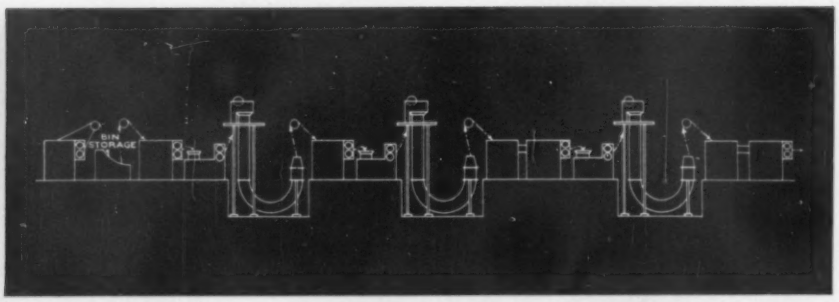


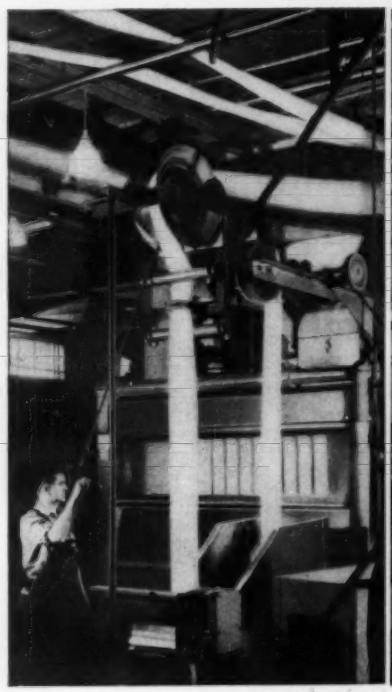

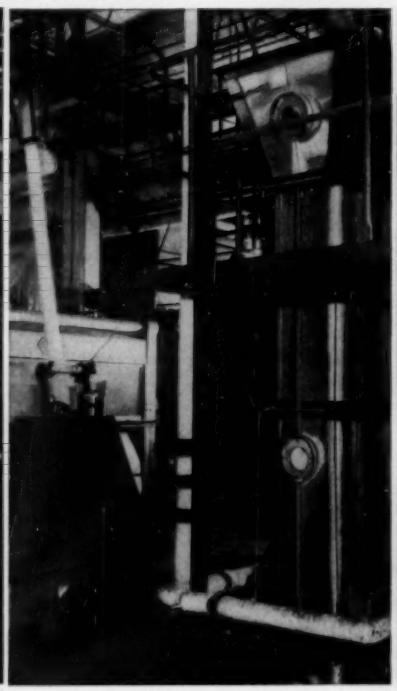

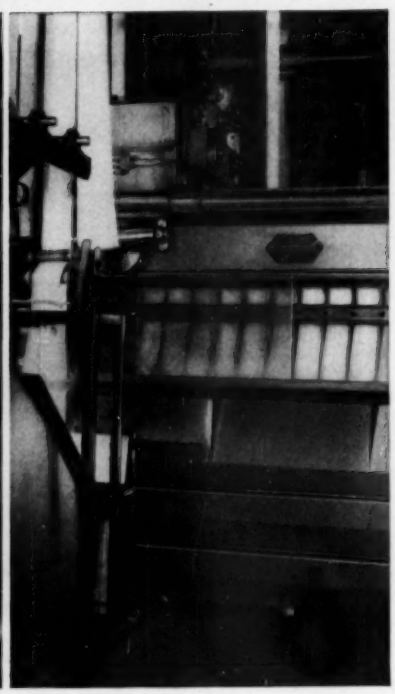

# Brighter profits in Continuous Bleaching

With push-button automation, more than 400,000 yards of cotton per day are run 2-ply single rope through the 4-stage continuous bleaching range at Dominion Textile Ltd., without sacrificing whiteness, fiber strength, appearance, hand or elasticity. This is the sort of production that brightens profits in continuous bleaching.

Rodney Hunt engineers worked closely with Dominion Textile and Becco in designing the range to meet these production requirements. This installation, including the notably efficient Tensitrol® washers, saturators, J-Boxes and auxiliary units, is engineered and constructed to withstand high speeds under continuous operation with minimum downtime.

Rodney Hunt manufactures bleaching ranges and Rangettes® in both Becco and DuPont types. The Rangette, single or two-stage, was developed to run at speeds of 100 ypm, as a complete unit or in conjunction with high-speed equipment.

We invite you to write for literature describing Rodney Hunt wet finishing equipment.

**RODNEY HUNT MACHINE CO.**

Textile Machinery Division

66 Mill Street, Orange, Massachusetts, U.S.A.

RODNEY® HUNT

SERVING THE TEXTILE INDUSTRY WITH EQUIPMENT AND ENGINEERING



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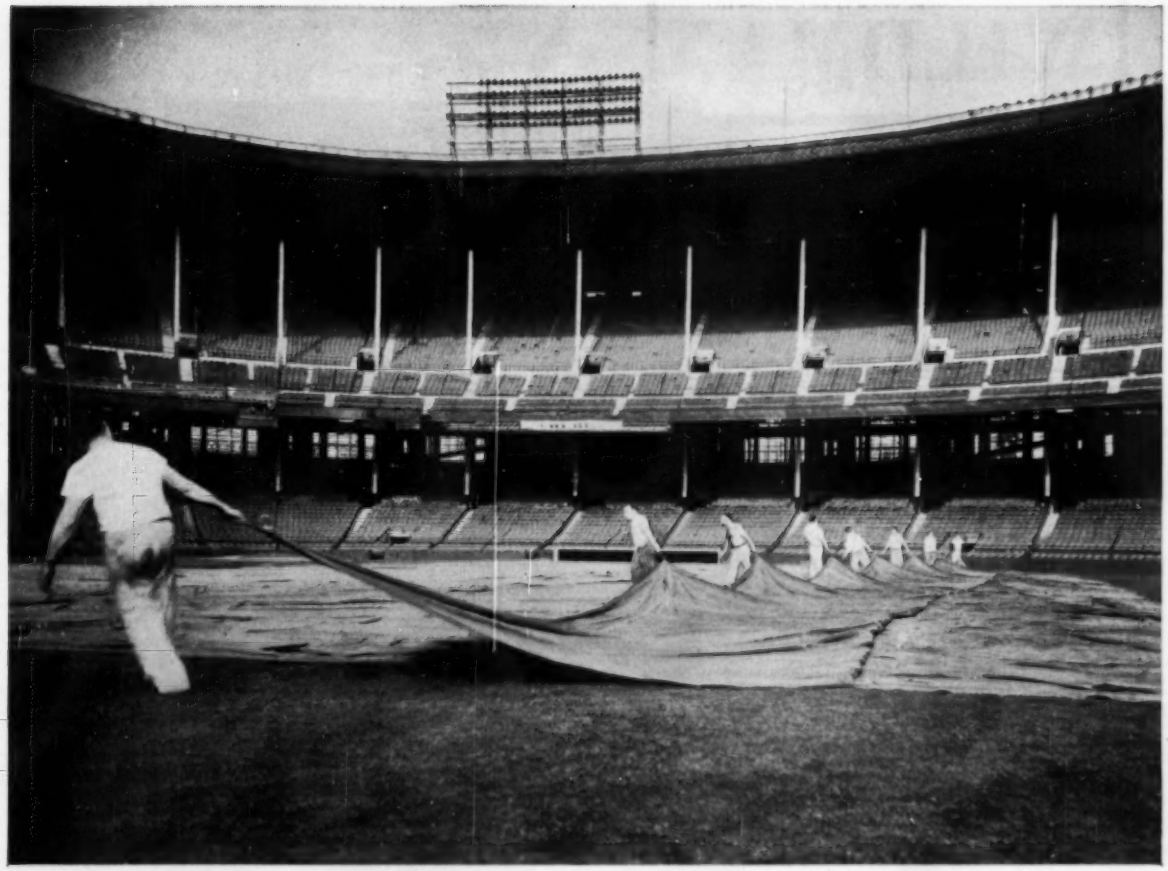
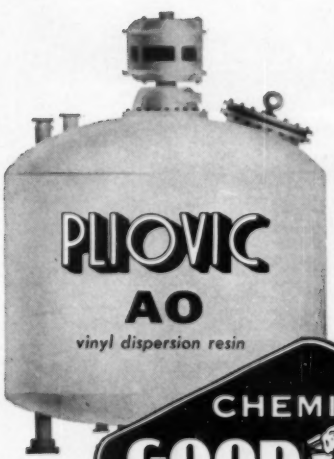


Photo courtesy Sawyer, Tower, Inc., Coated Fabrics Division, Watertown, Mass.

# Clue to covering the bases best




Fast-moving combination in today's protective-covering field is vinyl-coated nylon. Light weight–high strength–flexibility–impermeability –resistance to oils and chemicals–and excellent weatherability–are the reasons. This new type of tarp is finding wide use on everything from small skiffs to truck trailers to baseball fields.

Clue to coating nylon successfully lies not only in selection of right materials, but in their proper application. One leading manufacturer builds up to the correct coating thickness with several light applications, individually fused, under closely controlled conditions. For that reason, precise control of the viscosity of the coating is essential–and that's why he uses PLIOVIC AO.

PLIOVIC AO is vinyl copolymer resin for dispersion. It exhibits high thixotropy for (1) effective control of viscosity, when used as a modifying resin and (2) good "holdout," when used as the base resin. PLIOVIC AO fuses at low temperatures for longer product life through a shorter heat history. And it tolerates a wide range and high percentage of extender plasticizers giving low compounding costs.

For full details plus the latest *Tech Book Bulletins*, write to: Goodyear, Chemical Division, Dept. A-9441, Akron 16, Ohio

CHEMICAL
GOODYEAR
DIVISION

PLASTICS
DEPARTMENT

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries



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# WILDMAN JACQUARD

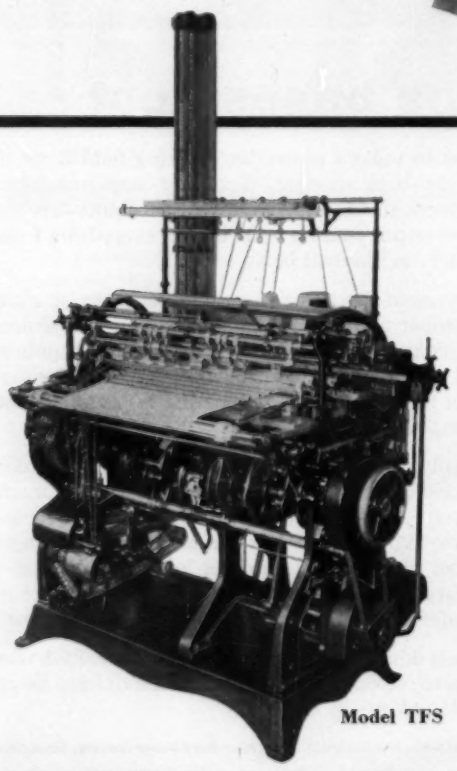
***the accent is on quality fabrics***

Whether it be full fashion or plain interlock, fabrics made on Wildman Jacquard knitting machines are "distinctively different" in quality and appearance.

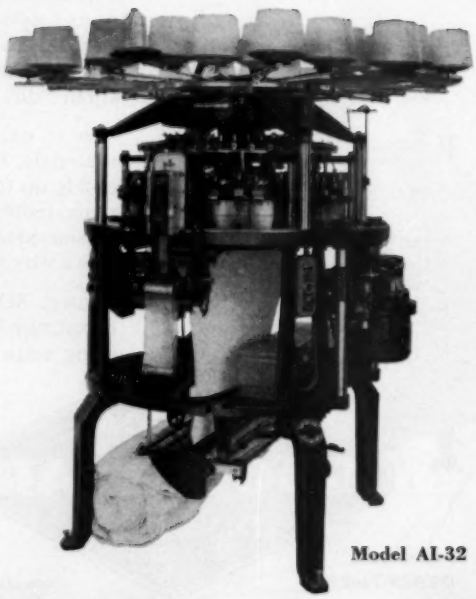
The "TFS" 30″ single section full fashion machine permits increased production, multiplicity of sizes to be run simultaneously, less downtime and greater ease of operation.

The model "AI" 32″ diameter 32 feed "single purpose" circular interlock machine (rib type) produces a larger, more serviceable piece of true interlock fabric.

For knitting versatility, production, and quality — specify Wildman Jacquard Knitting Machinery.



Model TFS



Model AI-32

*For complete information, write:*

**WILDMAN JACQUARD CO.** . . . *leading manufacturers of fine knitting machinery*

**1210 Stanbridge Street, Norristown, Pennsylvania** • *A subsidiary of* Draper Corporation Hopedale, Mass.

*News about*

# B.F.Goodrich Chemical *raw materials*

## Geon ushers in new uses for non-woven fabrics

BECAUSE of Geon polyvinyl latex, non-woven fabrics are being used in more new ways. Cotton, wool, nylon and rayon random fibers are being bound with Geon latex and magically transformed into a wide variety of durable new fabric materials with outstanding properties.

Besides good hand, these interesting textile materials possess unusually high tear strength and exceptional abrasion resistance. They withstand repeated washings and sterilization.

A few of the products now being made of Geon latex bonded non-woven fabrics include: dish towels; wash cloths; lining and stiffeners for clothing; and bed sheets for the allergic.

Learn more about developing modern fabrics with Geon polyvinyl materials. Write Dept. FX-4, B.F.Goodrich Chemical Company, 3135 Euclid Ave., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

**B.F.Goodrich Chemical Company**
**a division of The B.F.Goodrich Company**

**B.F.Goodrich** GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors



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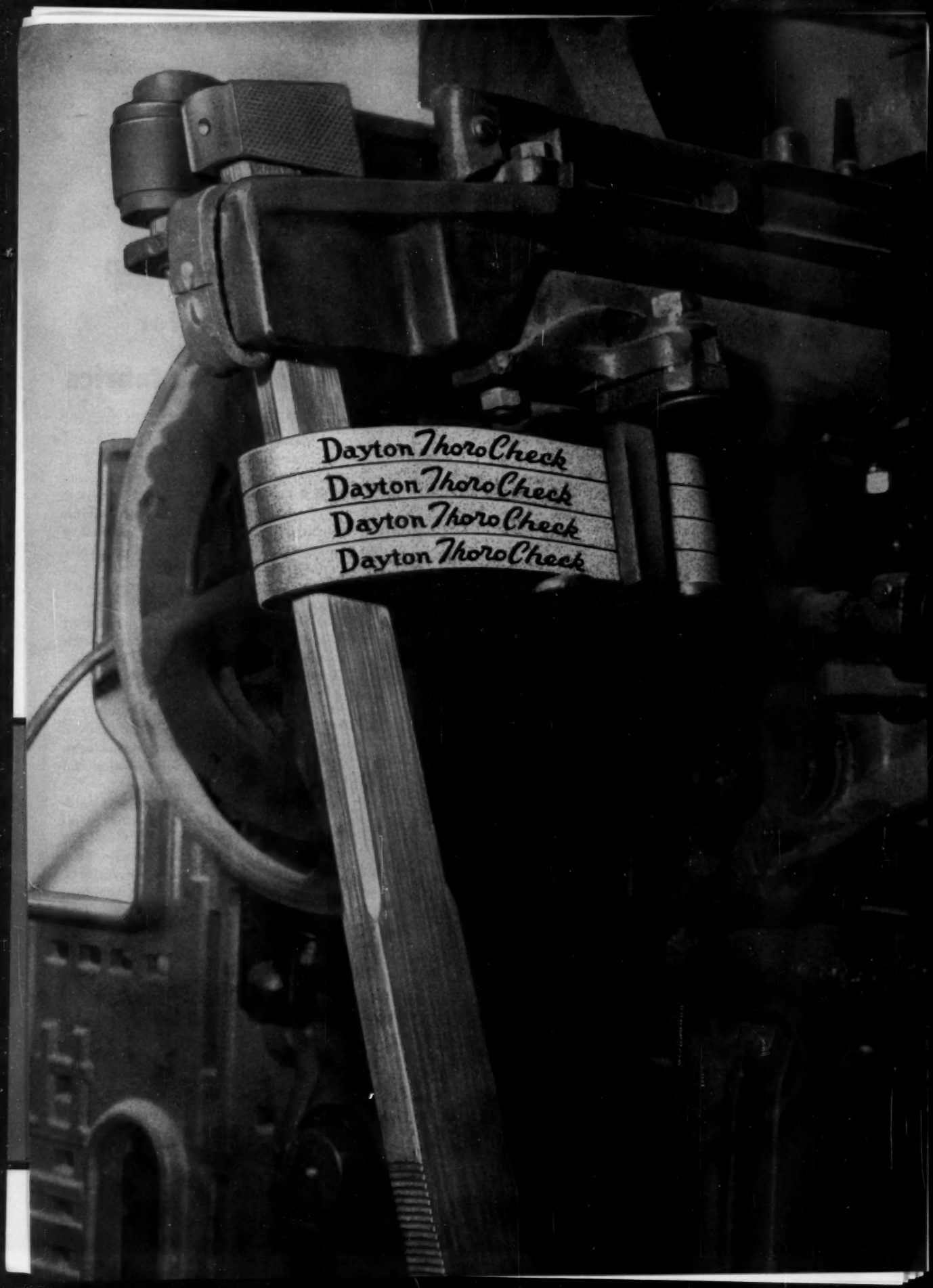

Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

## Exclusive graduated braking action of

# Dayton ThoroCheck Straps reduces replacement 25-50%

### Protects entire picking mechanism

Snubbing the picker stick to a graduated stop does even more than reduce replacement and maintenance costs of Dayton Endless ThoroCheck Straps. It gives you added savings by protecting and lengthening the life of pickers, sticks and shuttles.

Here's how Dayton's exclusive graduated checking action works. Instead of one wide strap, you have four narrow super-strength endless straps, which are quickly and easily installed.

The natural motion of the stick causes it to strike the top strap first. Under the impact, it "gives" slightly. A split second later, the second strap goes into action. Similarly, each of the straps slows the stick until all four Dayton Endless ThoroCheck Straps have taken hold. Then, with all four gripping the stick firmly, they bring it to a smooth, controlled halt.

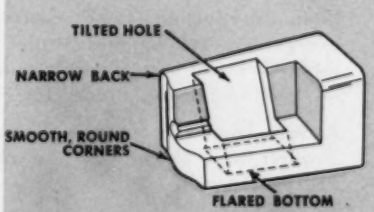
Impact is spread equally over the four straps. This more even distribution of snubbing action, plus greater tensile strength, is the reason Dayton Endless ThoroCheck Straps give 25-50% more wear.

This additional service has been proved in mill after mill.

Pickers, shuttles and sticks last longer, too, because Dayton check straps bring the stick to a "cushioned" stop. Temperature or humidity never affect Dayton ThoroCheck Straps, so you're assured fast, Monday starts.

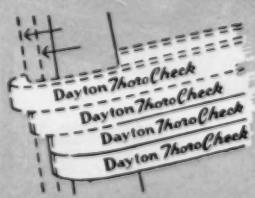
For more information on the savings and equipment protection you get from Dayton Endless ThoroCheck Straps, call your mill supply jobber or write The Dayton Rubber Company, Textile Div., 401 S. C. National Bank Building, Greenville, S. C.

**Dayton Thorobred Loop Picker**




All the qualities for perfect, longer picking

**Dayton Endless ThoroCheck Straps**



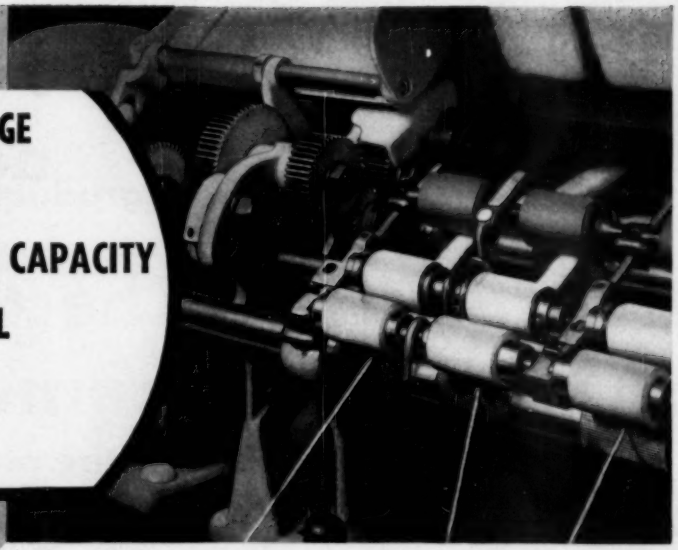

Picker stick is slowed by each Dayton Endless ThoroCheck Strap. Then all four cushion it to a halt, distributing the wear, impact.

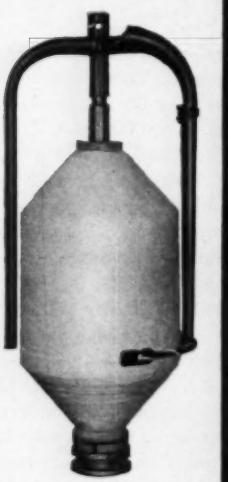
© D. R. 1956

# Dayton Rubber

*Dayco and Thorobred Textile Products for Better Spinning and Weaving*

- FULL SIZE 12" x 7" PACKAGE
- UNEQUALLED PRODUCTION
- 37% INCREASE IN BOBBIN CAPACITY
- MAXIMUM FIBRE CONTROL
- HIGHEST EFFICIENCY
- COMPLETE VERSATILITY





# A few of the reasons why SACO-LOWELL FS-2 ROVING FRAMES with JUMBO CONES are now more than ever, first choice of the discriminating mill seeking highest quality at lowest cost

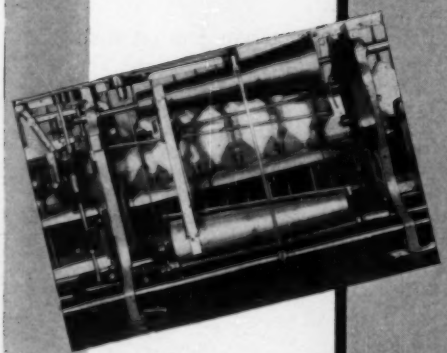
Built on a 10¼" gauge, it produces a full size 12" x 7" bobbin weighing more than 78 ounces*, an increase of 37% over conventional 12 x 6 frames.

With the proper stock and suitably prepared drawing, roving, with a C.V. of under 6.00 is a continuing achievement of FS-2 Roving Frames.

•

In this highly competitive era, this period of rising costs and dwindling profits, it is imperative that mills spend money only for machinery that produces a result to justify the expenditure — machinery that helps pay for itself through higher production, lower costs and improved quality. Mills everywhere tell us that Model FS-2 Roving Frames do just that — every test against competitive equipment proves it — ever increasing orders for FS-2 are the end result.

A Saco-Lowell engineer will be glad to arrange a demonstration and show you the mill proven figures. Compare FS-2 performance.



* Net weight varies with bobbin dimensions, twist constant, density of stock, hank roving, the lay, and other local conditions.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE, SANFORD, N.C., EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

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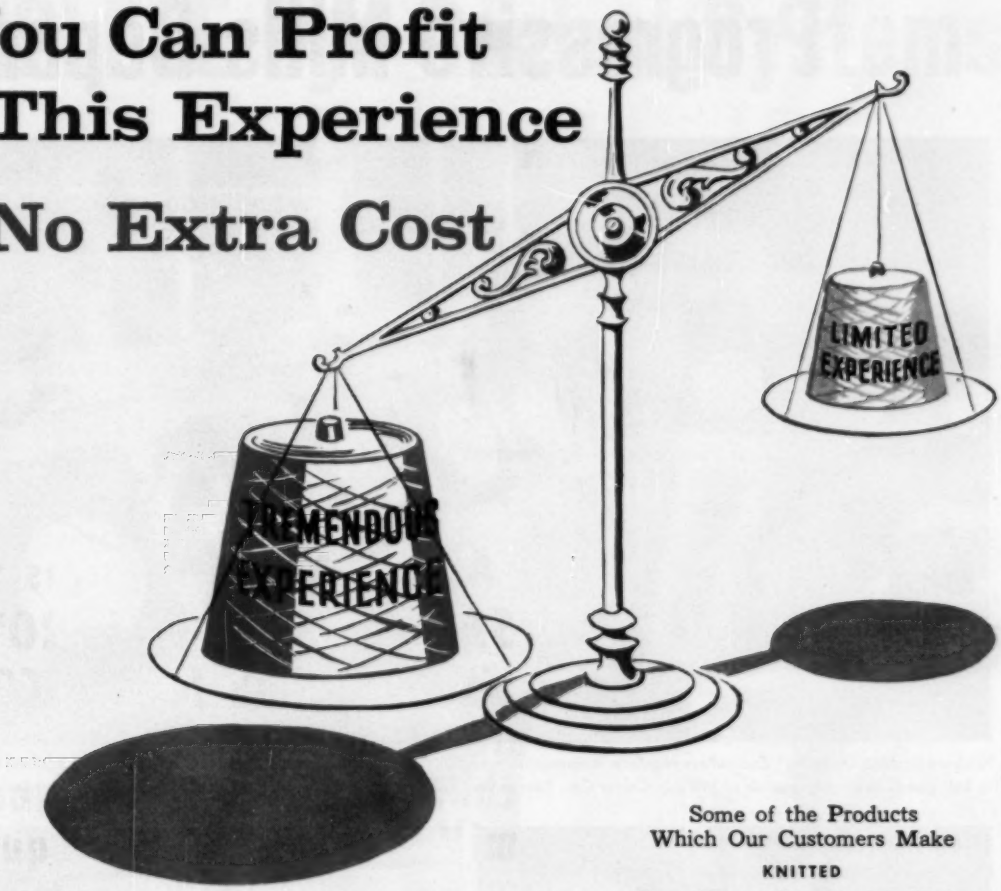
# You Can Profit By This Experience At No Extra Cost




EACH YEAR we supply a great variety of colored yarns to over 500 manufacturers in more than 30 different industries. The fibres that we dye and some of the products that our customers make are listed herewith.

*You* can profit by this experience, and the know-how it has given us, at no extra cost. For instance, we can advise you on the best type of dye for the purpose, fashion trends in colors, the best method of rewinding from Franklin Packages (if you do your own winding), the best yarn put-up, the proper yarn conditioning, correct finishing procedures and the best way to handle dye lots in the mill.

Since it costs you no more, why not take advantage of the *extra* service that our 5 strategically located plants can give you?

Some of the Products Which Our Customers Make

**KNITTED**

Sports Wear • Slip Covers • Gloves Underwear • Hosiery • Trim • Wash Cloths • Swimwear • Foundation Fabric

**WOVEN**

Shirtings • Dress Goods • Industrial Fabrics • Narrow Fabric and Webbing Wool and Worsted Suitings • Drapery and Upholstery Fabrics • Automotive Trim • Elastic Fabrics • Toweling Sheetings

**MISCELLANEOUS**

Shoe Laces • Bag Goods • Rick-Rack Rubber Covering • Braided Carpets Sewing Thread • Wire Covering Novelty Yarn • Tufted Textiles Surgical Products • Elastic Braids

**DYERS OF**

COTTON (Carded, combed, mercerized) • ORLON* (yarn and tow) ACRILAN • DACRON** • BAN-LON® HELANCA • SPUN NYLON • SPUN RAYON • BLENDS • WOOL and WORSTED

*Franklin Process*

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD
DYEING EXCLUSIVELY ON THE FRANKLIN SPRING

Providence • Philadelphia • Greenville • Chattanooga • Fingerville, S. C.
*New York Office* — 280 Madison Avenue

*Dupont's acrylic fibre.
**Dupont's polyester fibre.



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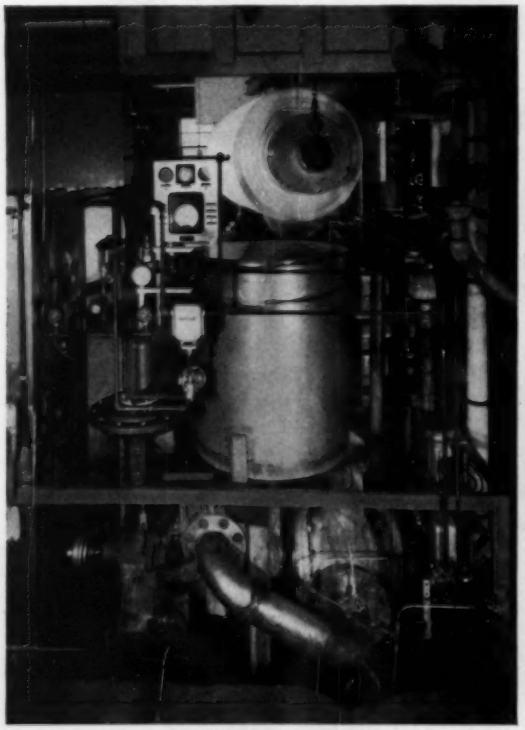
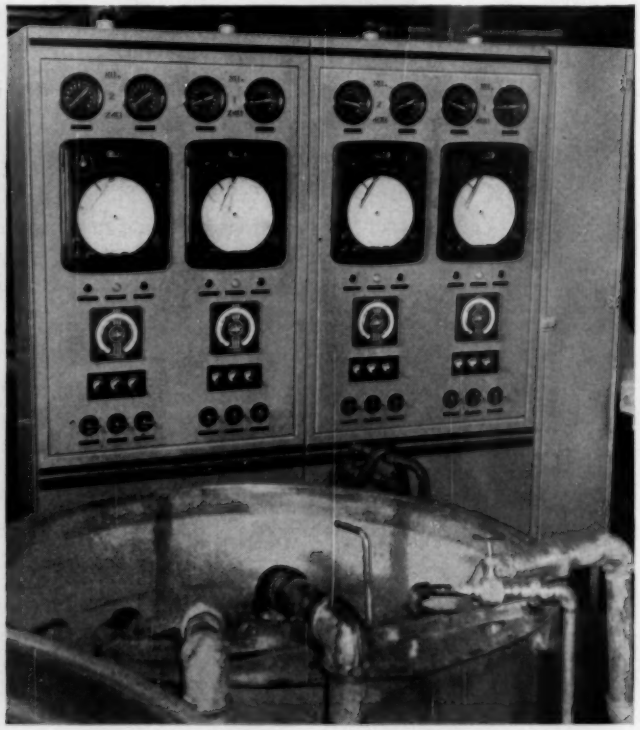
# Progressive Mills Depend on

Foxboro Remote CycleLog* Controllers regulate temperature schedules in knit goods dyeing operation at William Carter Co., Barnesville, Ga. From this centralized location, dyer and assistant easily handle more than 15 complicated time-temperature schedules simultaneously.

*Reg. U.S. Pat. Off.



Foxboro At-The-Machine System for complete control of high temperature dyeing machine. Proper temperature schedules, flow and flow reversal rates are assured in synthetic cloth dyeing at Kenyon Piece Dye Works, Kenyon, R. I.



Foxboro Cabinet Control Systems. Shown here are 4 of 15 identical control systems regulating dyeing schedules in different makes of package dyeing machines at Dixie Mercerizing Company, Chattanooga, Tenn.

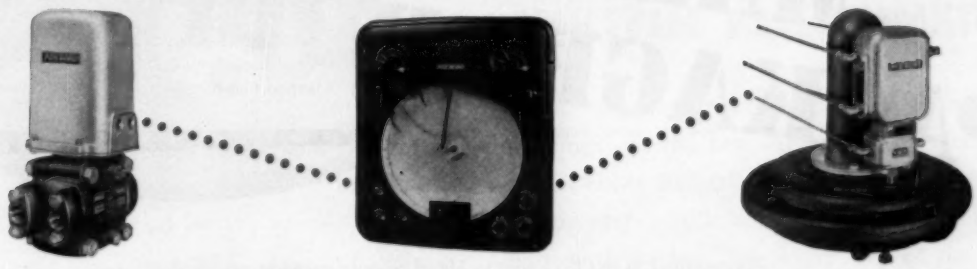
# COMPLETE Dye Control Systems

## ...engineered by Foxboro

More and more modern mills are finding that consistent uniformity is assured economically in *any* dyeing operation with a Foxboro-Engineered Control System. These advanced instrument systems are *complete* ... perfectly matched to the machines they control. They're available for every type of dyeing: raw stock, yarn, synthetics, and others. There's no guesswork. Every step in the most complicated flow or temperature schedule can be precisely reproduced by simple knob settings, giving you uniform results, every time. The installations shown here, are typical of hundreds of Foxboro Engineered Cabinet Control Systems. Depend on them for *better* control of every dyeing operation in your mill.

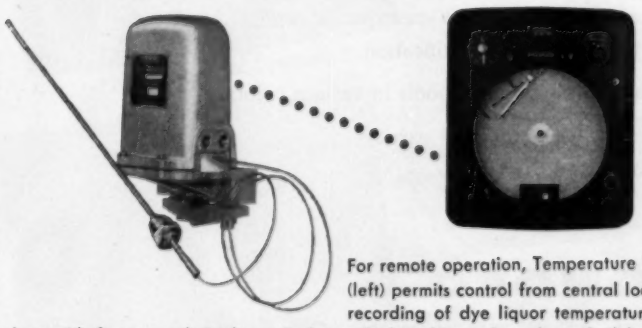
Write for Data Sheets on Control for your type of dyeing operation. **The Foxboro Company, 847 Neponset Ave., Foxboro, Mass., U.S.A.**

**FOR AUTOMATIC CONTROL OF FLOW AND PRESSURE...**



By combining flow and flow reversal control with overriding pressure control, a Foxboro system gives the precise flow required by the dyer, plus positive protection for beams, to prevent blowing. Type 13A d/p Cell Flow Transmitter (left), measures dye liquor flow, and transmits it to Timer-Set Control Station (center), where actual flow rates are recorded. Operator merely sets desired rates... control action maintains exact rate and reverses flow automatically. Control setting is transmitted to valve-mounted Model 59 Flow Controller (right).

**FOR AUTOMATIC CONTROL OF TEMPERATURE CYCLES...**



For remote operation, Temperature Transmitter (left) permits control from central location, and recording of dye liquor temperature on same chart with flow record. Foxboro CycleLog (right), the camless, time-schedule controller, fills all normal dyeing requirements. Each step of individual schedules set by simple adjustments of knobs... CycleLog automatically carries out entire dyeing schedule.

FOXBORO
REG. U. S. PAT OFF

**INSTRUMENTATION FOR TEXTILE PROCESS CONTROL**



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**Customer satisfaction**

**depends on your package...**

SONOCO

# Single Head Spools

FOR INDUSTRIAL THREAD

# MAKE YOUR PACKAGES BETTER

Economical SONOCO Single Head Spools provide an ideal foundation for industrial thread packages. The tapered base permits free delivery and uniform tension. Your customers want thread wound on SONOCO Single Head Spools to insure top take-off performance.

These carriers are an original SONOCO development and are industry-accepted for packaging all types of industrial thread. Special scoring and surfaces available to meet your specific need. Colored lacquer tips may be ordered for identification.

SONOCO also furnishes plastic single head spools in various colors.

Remember—good packages depend on good carriers . . . order SONOCO Single Head Spools now!

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# Put Magic in YOUR carpets with carpet yarns prepared and processed on WHITIN MACHINERY

3-Cyl., Full Roller Card Set

Flex-Spin Wool Spinning

The "Magic" is created by processing the yarns on machinery which brings out the best carpet-making qualities inherent in the fibers, either natural or synthetic.

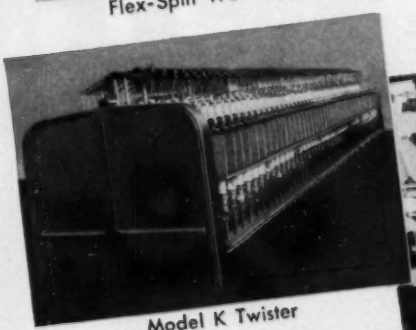
Top ranking carpet mills across the country depend on Whitin equipment to do just that, every step of the way — from carding through spinning to twisting and winding.

*Descriptive literature available on all of the machinery shown. We would be happy to mail it to you.*

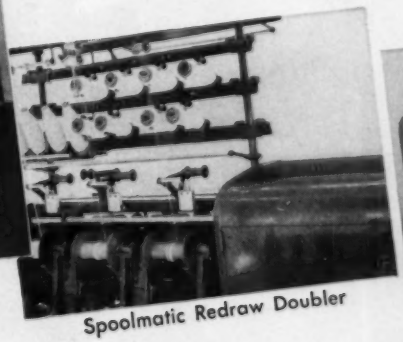
**Whitin MACHINE WORKS**

WHITINSVILLE, MASS.

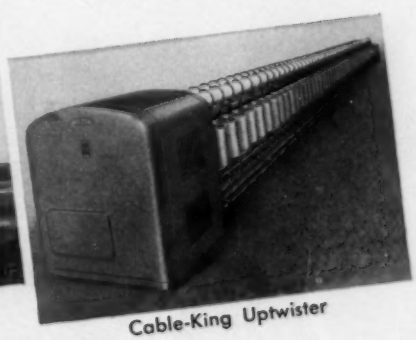
CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA.
SPARTANBURG, S. C. • DEXTER, ME.



Model K Twister



Spoolmatic Redraw Doubler



Cable-King Uptwister



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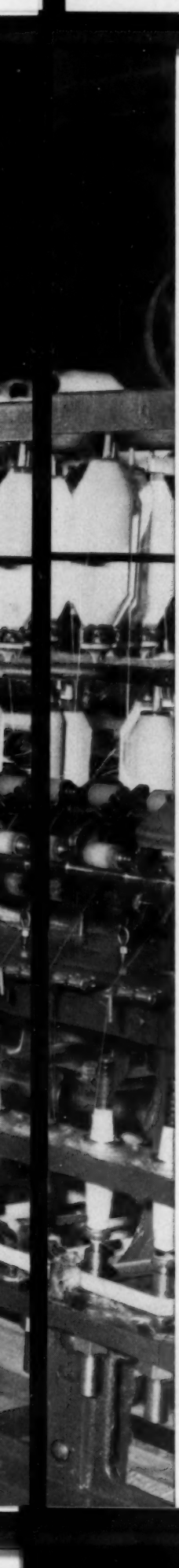


# *RIGHT... for any frame or fiber ...Armstrong Accotex Cots*

Whether you're spinning natural fibers, synthetics, or blends — on whatever type of equipment — there's an Accotex® Cot in the wide Armstrong line specially engineered to solve any spinning problem you may have.

For example, if you're getting too many front roll laps, a switch to Accotex J-490 Cots may be the answer. These cots contain a special electrolyte that neutralizes the attractive forces between fibers and cot. In fact, this unique material actually tends to repel loose fibers. The versatile J-490 roll cover has proved in hundreds of mills how effectively it can control lapping.

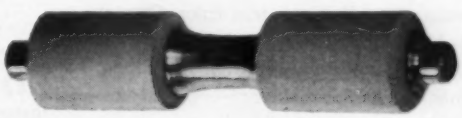
Where high static aggravates the lapping problem, one of the new anti-static Accotex materials is often the solution. These new materials are made especially to minimize lapping on frames where non-metallic cap bars are used and where other metal-to-metal contacts have been eliminated. The anti-static cots are especially recommended where synthetics or blends are being spun.

Accotex NC-762 — one of the new anti-static materials — is recommended for controlling eyebrowing on spinning and roving frames. Many mills also report substantially reduced clearer waste with NC-762. And the waste that does form is packed well back under the clearers.

With some types of yarn, it has been found that a softer cot will improve strength and reduce irregularities. Accotex materials made of softer compounds are available to meet this need.

Your Armstrong representative is a good man to talk to about any problem involving roll covers. With his background of experience, he can help you select the right roll cover for best performance on your equipment, whether you're spinning natural fibers, synthetics, or blends. Call him today or write Armstrong Cork Company, Industrial Division, 6507 Dauphin Street, Lancaster, Penna.

**For more information on Accotex Roll Covers, or other Armstrong textile supplies, write for the booklet, "Armstrong Textile Supplies." Use it as a guide in the selection, installation, and maintenance of Armstrong spinning and weave room supplies.**



**Armstrong** ACCOTEX COTS

*... used wherever performance counts*

COLOR
COLOR
COLOR
COLOR

# Nothing gives truer color than **AVISCO**® rayon

Color is more and more the magic of mass sales. Brilliant, true color. Offbeat in-between color. New color that makes the difference between "just looking, thank you," and a sale.

The dye chemist has played his part, and the designer his. It remains only to select the right fiber. Then to make it into a fabric that can be dyed economically enough to bring full color opportunity to any apparel price range.

. . . a fabric that takes the wanted color with precise and unquestioning obedience.

. . . a fabric that will cling to its color through sun, soap or smog.

. . . a fabric that can be finished and textured and tailored however you wish.

Such a fabric is made of Avisco rayon. Promoted with the Avisco Integrity Tag, it assures both retailer and consumer that it has met strict standards and will perform as claimed. For details, call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.

← For more data, write this page number on Reader-Service card.

# *Sandoz Directs . . .*

## for every combination of color value and fastness

When you choose Sandoz direct dyes, you can produce dyeings that meet every technical requirement —from excellent fastness properties and widest color range to maximum economy. For highest light fastness, investigate the Sandoz Lumicrease colors. For the most effective combination of wash and light fastness, look to the Sandoz Pyrazol Fast colors, or the Cuprofix dyes with Cuprofix aftertreatment. A magnificent line of resin-fast shades may be produced with these colors.

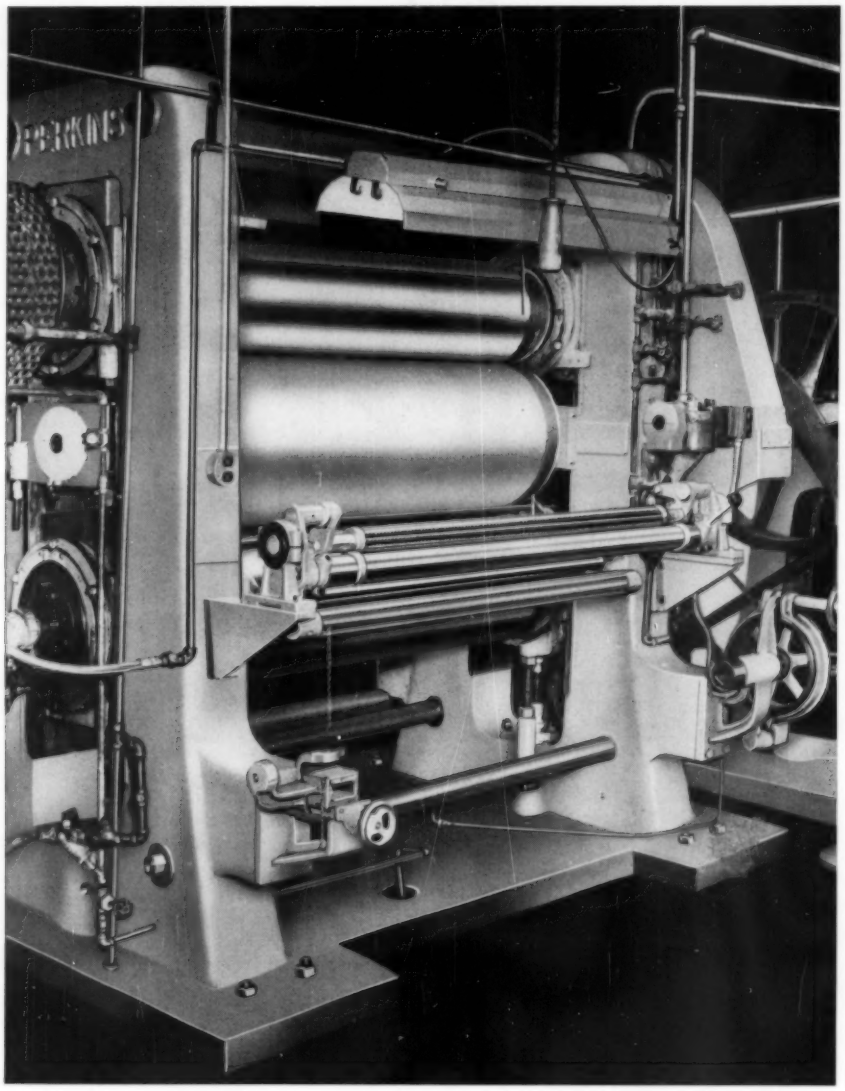
Sandoz products are sold and demonstrated by men who take a personal interest in your dyehouse problems. They offer the direct, personal service that a well finished fabric deserves. SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

**SANDOZ**

THINKS AHEAD WITH TEXTILES

SANDOZ

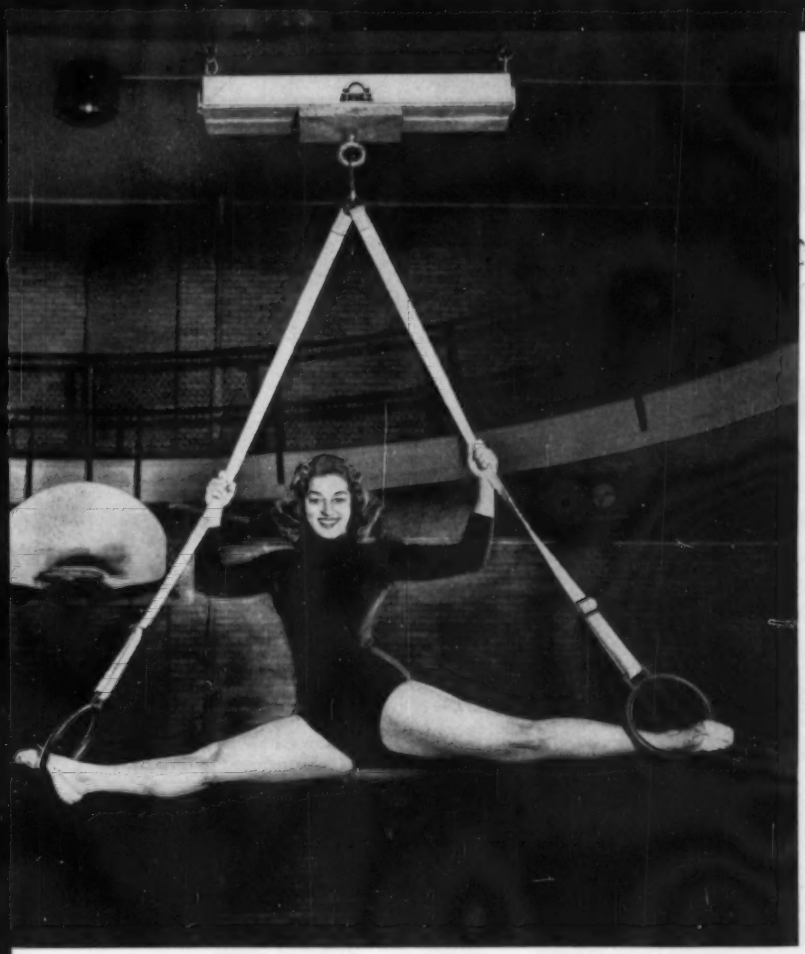
# ANOTHER OUTSTANDING PERKINS TEXTILE CALENDER

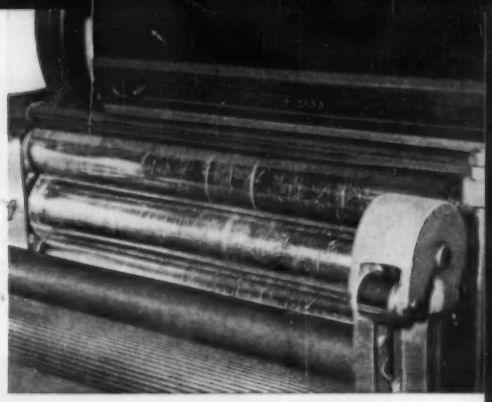



Perkins Three-Roll Hydraulic Calender—100 tons gross operating pressure—two chilled iron rolls—one wool felt paper roll—anti-friction bearings throughout—friction brake let-off—three adjustable tension bars—and the famous Perkins mechanism for automatic detection of seams and slubs. A modern, high production calender.

**B. F. PERKINS & SON, Inc. • HOLYOKE, MASS.**

*Southern Sales Office* • 1609 Liberty Life Bldg. • Charlotte • North Carolina





**THE WOEFUL ROLE OF PICKER CALENDER ROLLS.** When's the last time you checked your calender rolls? Did they look like those above . . . damaged by pieces of stray metal that left lasting impressions, and also damaged lickerin and card clothing? Chances are, your own equipment has also suffered because of spikes from aprons, ring travelers, nails, screws, bottle tops, etc. But now you can prevent machinery damage, reduce downtime, and eliminate poor card performance with an Eriez HI-POWR Permanent Non-electric Magnet. Why not invite an Eriez representative to look at your equipment? He'll be glad to survey your plant and recommend one of the many Eriez HI-POWR Magnets designed specifically for the textile industry.

ERIEZ
HI-POWR
MAGNETIC SEPARATORS

**THE DARING YOUNG GAL ON THE ERIEZ TRAPEZE!** Though she swings through the air with the greatest of ease, this pretty aerialist has nothing to worry about. Her rigging is held securely by an Alnico V magnet, hung from the ceiling of the gym. This idea of herculean magnetic power has found widespread acceptance in the textile industry, where permanent-powered magnetic separators are used in processing lines to remove tramp iron which could cause fires, machinery damage and production losses in cotton, woolen, rayon and waste mills. *All Eriez Magnets are non-electric, self-contained. They operate without any wires or attachments. Their magnetic power lasts a lifetime. The first cost is the only cost.*

## MAGNETIC IDEAS FROM ERIEZ

Eriez' free booklet "Magnetic Ideas" can help you. Send for it without obligation. ERIEZ MANUFACTURING COMPANY, 101U Magnet Drive, Erie, Pa. OR, on your specific request Eriez factory-trained field men backed by Eriez' laboratory and engineering know-how, will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

**PICKERS AND PROCESSING EQUIPMENT POLICED BY HI-POWR PLATE MAGNETS!** No danger of stray metal damaging the pickers, card and special processing equipment of the Chicopee Manufacturing Corporation, Ark., producer of more than 250 types of non-woven fabrics. Three Eriez HI-POWR Plate Magnets, each installed just above a spiked apron, are removing approximately one pound a month of wire, nails, bottle caps broken apron spikes and other tramp iron from the raw material which includes absorbent cotton, rayon, nylon and card returns. According to the Chicopee people, the Eriez Magnets have saved approximately $5,000 yearly in machinery damage and loss of production caused by downtime.

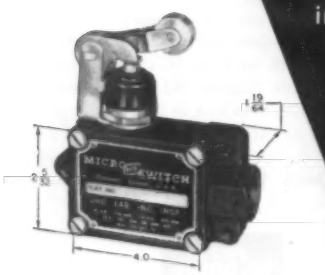
# MICRO SWITCH . . . FIRST IN PRECISION SWITCHING

## How mill operators are using MICRO SWITCH Precision Switches to make textile equipment more productive

*MICRO SWITCH Field Engineering Service is available for technical consultation on up-to-date textile switch applications*

### Important uses for these versatile precision switches in textile mill operation

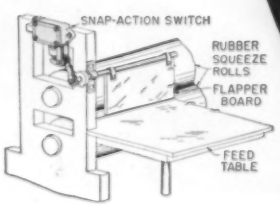
- As trumpet stops for combing heads
- To prevent needle breakage
- To eject unfilled quills automatically
- To control position of pressure roll
- As thread breakage detectors
- To position clamps on cloth stretcher
- As selvedge build-up control
- As carriage movement controls
- To stop bobbin winding when bobbin fills
- To stop motor when gear box is opened
- To control tension of cloth
- To control cloth position
- As thread run-out detector
- As fabric thickness detector
- And many others

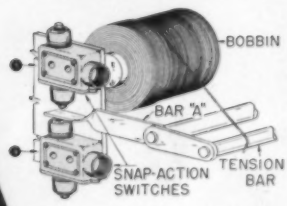



### Protects operator's hand in carpet-wringing operation

This plant superintendent installed a MICRO SWITCH roller-arm actuated switch to protect the operator of a carpet-wringing machine. If the baffle-board is pushed forward by the operator's hand, a cam operates the switch to shut off the roll. The machine will then not operate until the hand is withdrawn.

This sealed roller-arm actuated switch is for use with mechanically-operated cams or slides. The roller-arm is field adjustable through 360 degrees horizontally and 225 degrees vertically. The elastomer boot protects the switching unit against the effects of liquids, dust or other foreign substances.

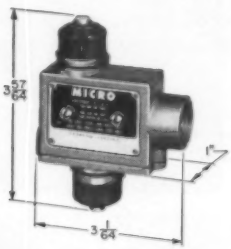



### Two switches keep proper yarn tension for knitting operation

Illustration shows how a textile mill operator uses two enclosed maintained-contact switches to prevent breakage of yarn due to either too high or too low tension. In either case, Bar A contacts one switch or the other and shuts off the mechanism.

The MICRO SWITCH maintained contact switch is used in applications which require sustained contact after the actuating force has been released. A reset plunger enables the switch to be reset for succeeding operations. Elastomer boots prevent entrance of dust or moisture through the actuating mechanism.




*Stocks of many types of MICRO SWITCH Precision Switches are available from distributors in key cities. Look under "Switches, Electric" in the Yellow Pages.*

**MICRO SWITCH**
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS



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# In carpeting, nothing adds all-around performance like NYLON

• How does nylon carpeting compare with wool? That's the question we have been asked most often by floor covering manufacturers, retailers—and consumers.

• Here, to our knowledge, is the first definitive answer on four of the most important counts: Wear, permanent texture, recovery from crush, and luster.

• It took many, many months to complete these actual in-use and laboratory tests. We'll be delighted to explain them in detail. And reprints are yours for the asking—



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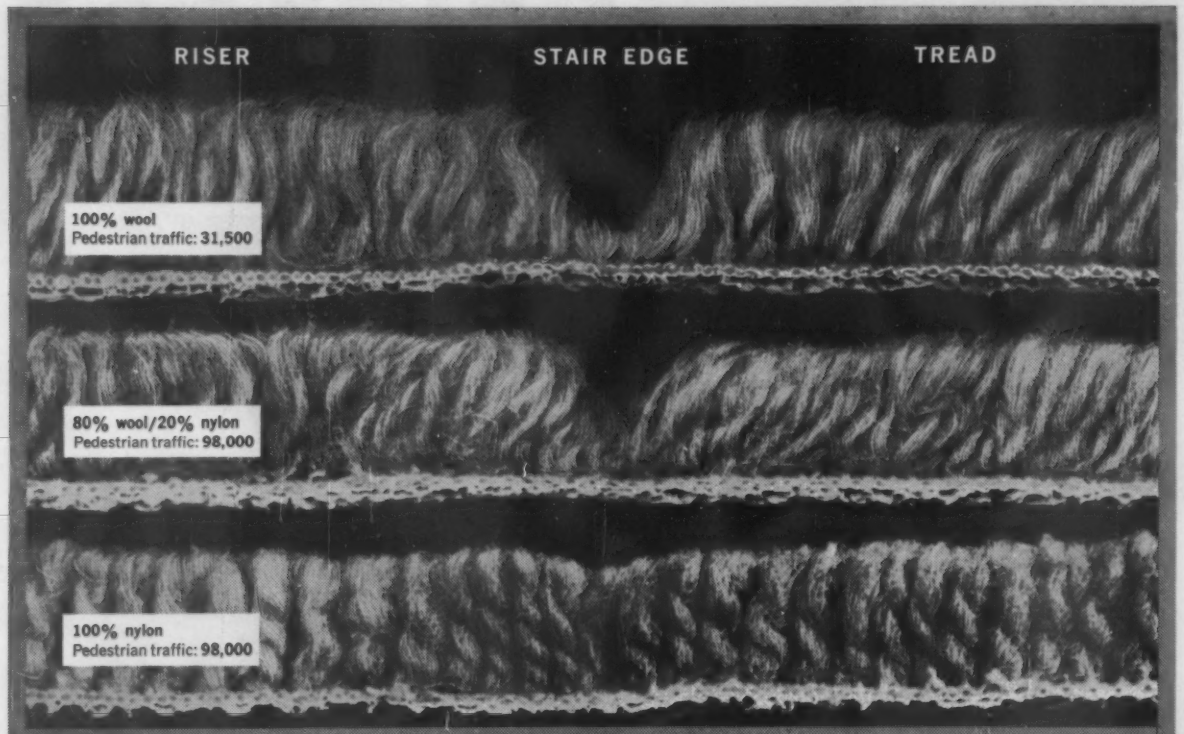
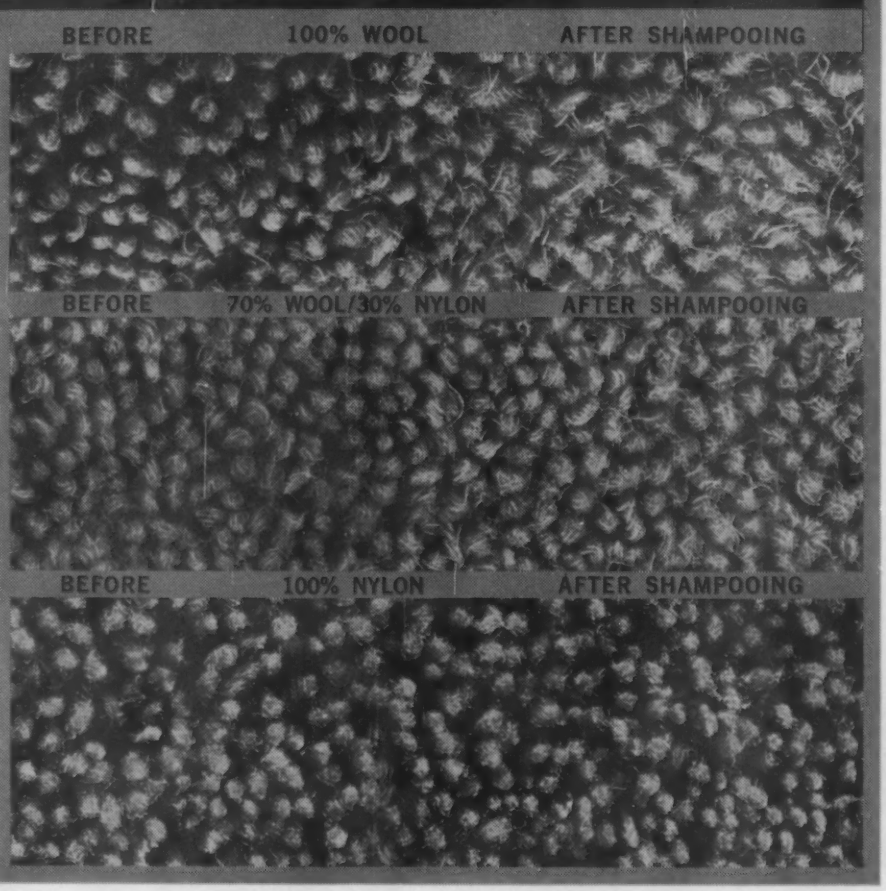



# permanent texture

Photos show identical* strips of carpeting before and after shampooing 10 times with rotary brush action. 100% wool has lost considerable texture. The addition of 30% nylon produces a fabric which stands up remarkably well, but not as well as 100% nylon which shows virtually no texture loss.



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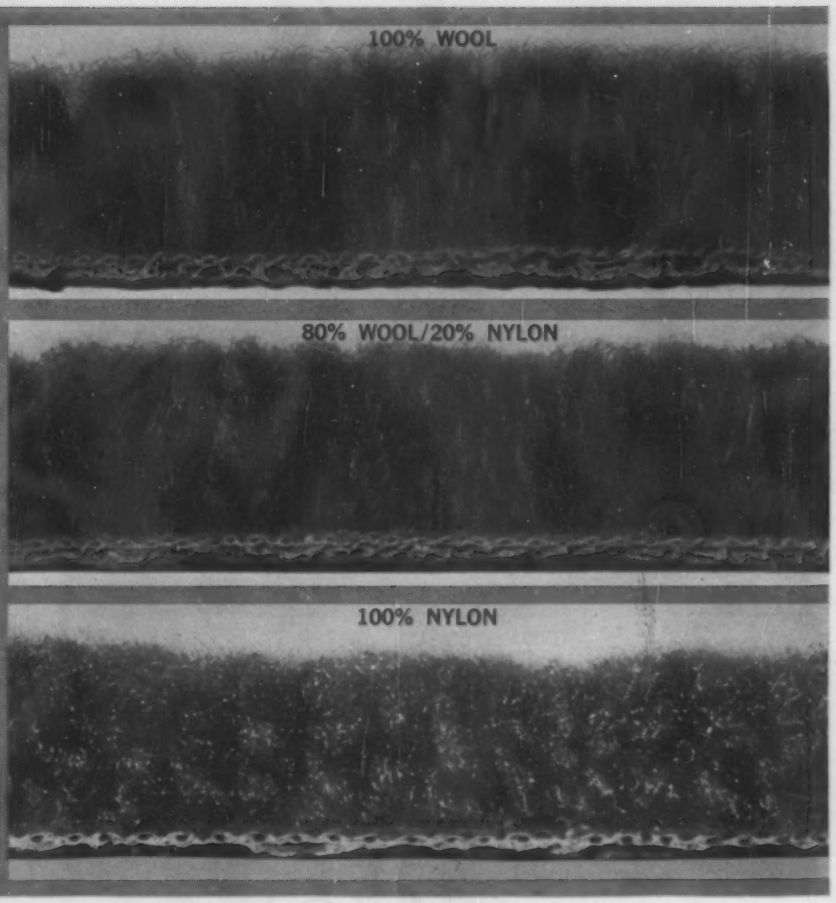
## wear...

Nylon outwears wool and every other carpeting fiber known. In this test, identical*, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. Strips were rotated regularly. 100% wool broke down at 31,500 pedestrian traffic mark. 80% wool/20% nylon was still useable after 98,000 pedestrians. At same 98,000 mark, 100% nylon shows virtually no wear.

## luster

The luster of nylon is well known. Manufacturers of better wool carpeting have for some time been adding nylon to get additional sparkle. Shown here are the relative degrees of luster of 100% wool, an 80% wool/20% nylon blend, and 100% nylon*

For this test, as in all others, identical* fabrics were used. But in order to get a color which would photograph properly against a white background, the carpet samples were re-dyed. Note that, as a result, the wool sample has lost almost all twist while the 100% nylon has lost virtually none.




THE NEW Nylon Staple I·R·C

*more tests*



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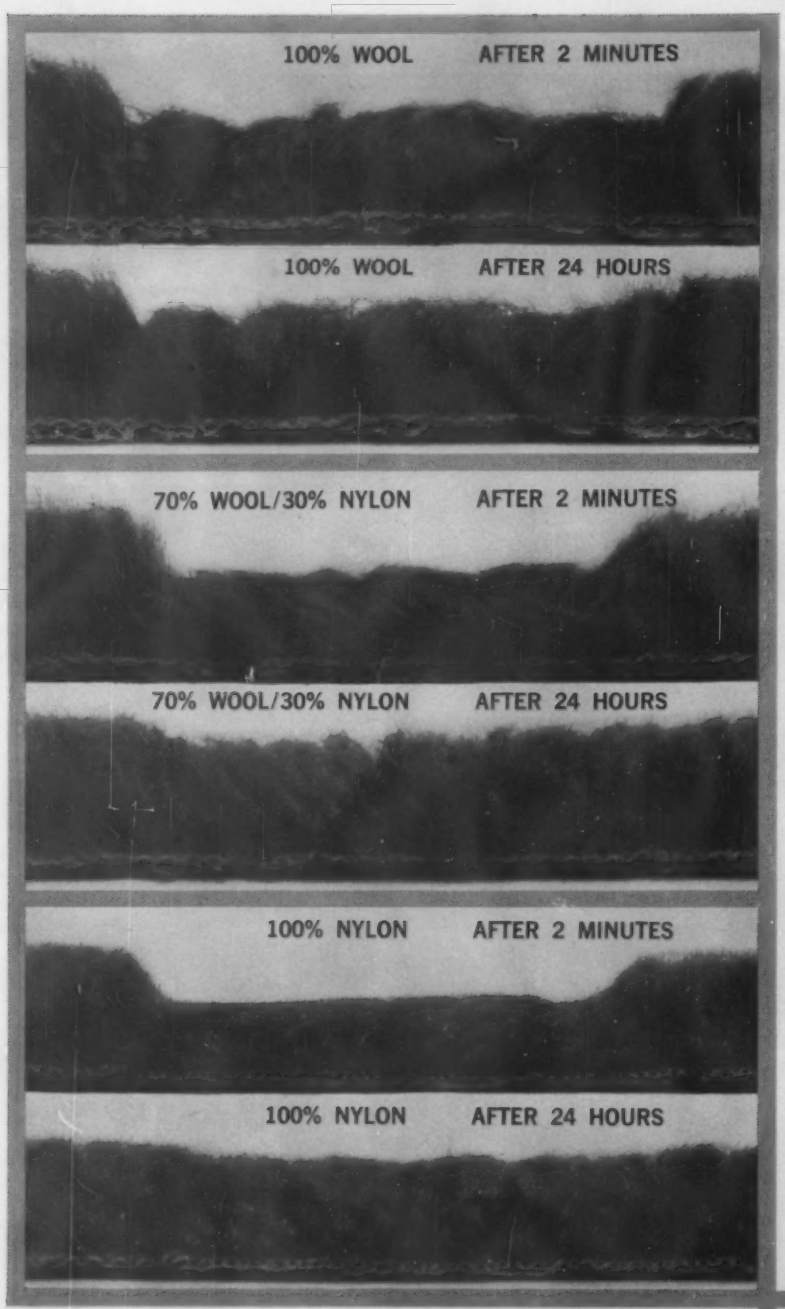
100% WOOL AFTER 2 MINUTES
100% WOOL AFTER 24 HOURS
70% WOOL/30% NYLON AFTER 2 MINUTES
70% WOOL/30% NYLON AFTER 24 HOURS
100% NYLON AFTER 2 MINUTES
100% NYLON AFTER 24 HOURS

# recovery from crush

Identical* carpets were subjected to a concentrated weight of 25 pounds per square inch pressure for 24 hours. This is comparable to the weight of a *standard sofa.* Photos were taken 2 minutes after removal of load and again 24 hours later. Although wool starts recovery more quickly, it does not come back completely after a full day. 70% wool/30% nylon blend and 100% nylon recover more slowly but more completely.

*Within each test, strips of carpeting were identical except for fiber content.

THE NEW Nylon Staple I·R·C

**INDUSTRIAL RAYON CORPORATION** Sales Offices: 500 Fifth Avenue, New York 36, New York • 627 Guilford Building, Greensboro, North Carolina

Wearability—recovery from crush—permanent texture—rich, vibrant luster ... these are the qualities you and your customers demand in fine carpeting. And here you see how nylon, in blends and 100%, adds these qualities to carpeting. In carpeting, *nothing* adds all-around performance like rylon. Want more details?



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FRANZ MÜLLER

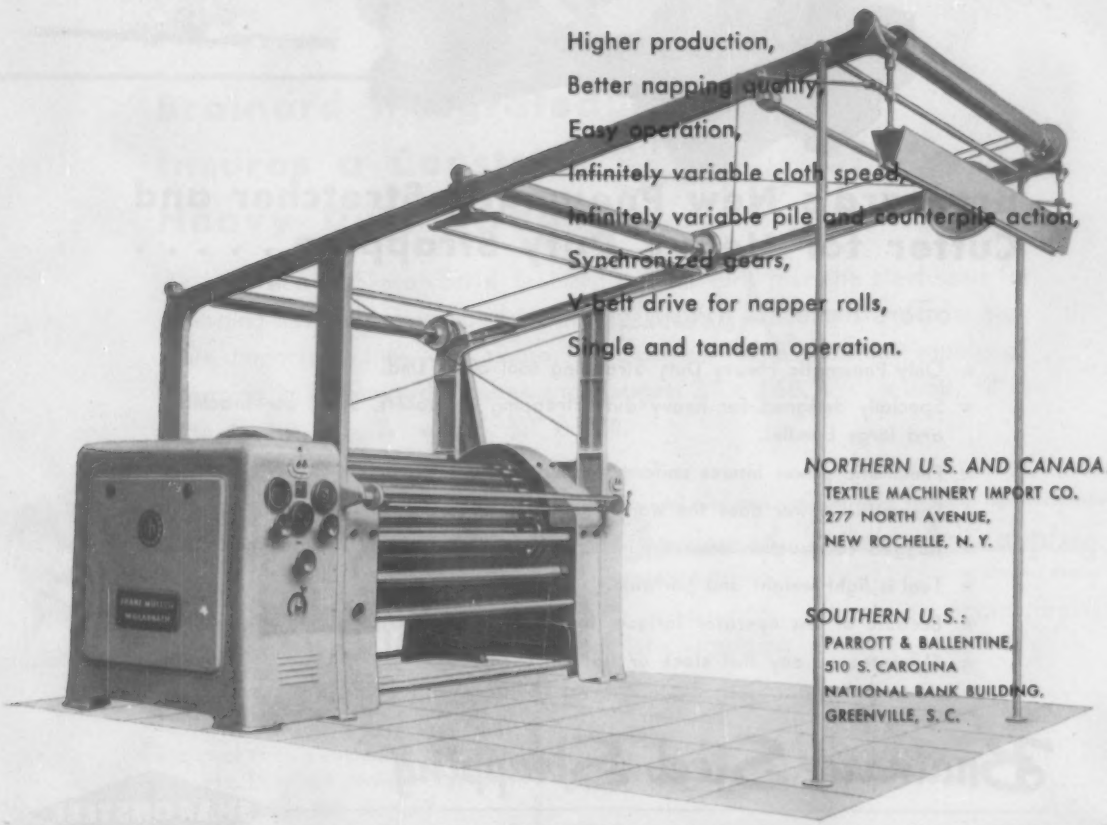
## More than 100 years ago

Franz Müller founded the company known today as Franz Müller, Maschinenfabrik, M.Gladbach. He eventually specialized in building textile machines and was the first one to construct a napper of rigid, horizontal design. Constant experiments proved, however, that adopting the planetary principle for the napper rolls produced much better results, and Franz Müller built the first fourteen-roller planetary napper - the proto-type of all similar nappers to follow.

In those days the first planetary napper startled the textile industry. Today the Franz Müller TRI-Napper has conquered the world's largest textile markets.

## The FRANZ MÜLLER TRI-Napper offers you -

Higher production,
Better napping quality,
Easy operation,
Infinitely variable cloth speed,
Infinitely variable pile and counterpile action,
Synchronized gears,
V-belt drive for napper rolls,
Single and tandem operation.



*NORTHERN U. S. AND CANADA:*
TEXTILE MACHINERY IMPORT CO.
277 NORTH AVENUE,
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*SOUTHERN U. S.:*
PARROTT & BALLENTINE,
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# FRANZ MÜLLER · MASCHINENFABRIK · M.GLADBACH (GERMANY)



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# it's NEW!
# it's PNEUMATIC!
## IT'S THE FIRST OF ITS KIND...

Combines two functions in one tool. Rapid and efficient tensioning and cutting.



## Brainard's New Pneumatic Stretcher and Cutter for Heavy Duty Strapping . . . . .

. . . offers these *Advantages*

- ★ Only Pneumatic Heavy Duty Strapping tool of its kind.
- ★ Specially designed for heavy duty strapping on pallets, skids, car bracing, and large bundles.
- ★ Pneumatic power insures uniform tension on each band.
- ★ Pneumatic power does the work. Eliminates operator fatigue.
- ★ Rugged construction assures minimum down time for tool maintenance.
- ★ Tool is light weight and portable.
- ★ Because of less operator fatigue, tool is more productive during work shift.
- ★ Operates on any flat stock or flat package.

## Brainard Steel Strapping

SHARONSTEEL

Brainard Steel Division, Sharon Steel Corporation
Griswold Street, Warren, Ohio

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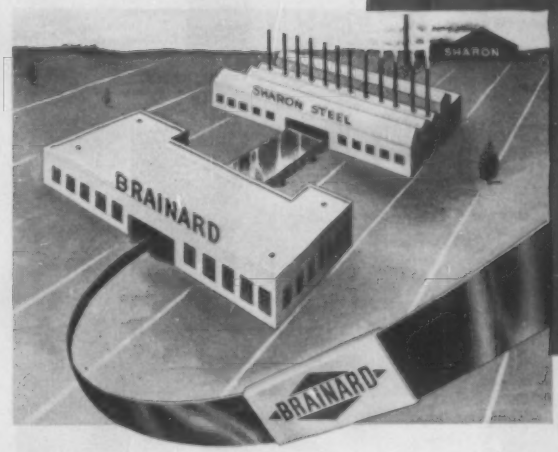
# and THAT'S ONLY PART OF OUR STORY...




## Brainard Integrated Production Insures a Constant *Supply* of Heavy Duty Strapping

As a division of Sharon Steel, Brainard can be sure that the steel used for strapping has been developed to meet their own exacting standards, and, more important, they can assure the customer of a constant supply of strapping in all heavy duty sizes and gauges: 2″ x .050, 1¼″ x .050, ¾″ x .050, 1¼″ x .035, ¾″ x .035, ¾″ x .028.

## SPECIAL HEAVY DUTY STRAPPING SERVICE

Brainard has a team of specialists in the use of heavy duty strapping for steel mills, car-loading, palletizing, etc. Why not contact Brainard and ask about this service?

**Brainard Steel Strapping**
Griswold Street, Warren, Ohio

Please send more information about Brainard's complete strapping service.

NAME.....

COMPANY.....

CITY..... STATE.....

PHONE.....



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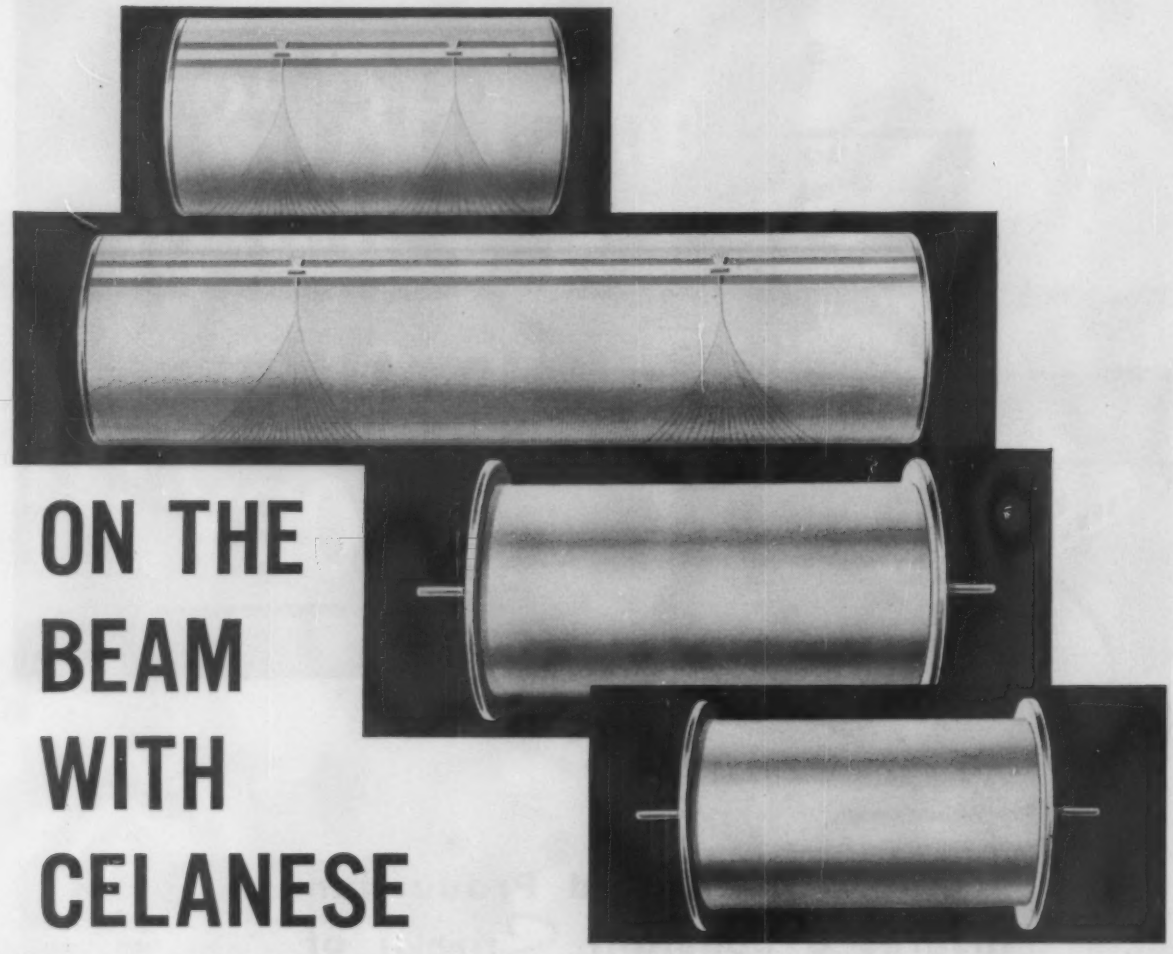

# ON THE BEAM WITH CELANESE

*Celanese has a tremendous range of tricot and weaving beams to save you an entire operation, production space, and machinery investment.*

## TRICOT BEAMS

| | |
|---|---|
| **14″ Flange x 42″ long.** | Primarily for shorter length patterns. |
| **14″ Flange x 84″ long.** | Primarily for shorter length—less flanges for better efficiency and quality in knitting. |
| **21″ Flange x 42″ long.** | Longer yardage beams. |
| **21″ Flange x 84″ long.** | Longer yardage beams—less flanges for better efficiency and quality in knitting. |

**45, 55, 75, 100, 120, 150 deniers.**
**Plain or pattern beams. Straight or ratio yardage.**

*For further information, write*
Celanese Corporation of America, Textile Division, Charlotte, N. C.

## WEAVING BEAMS

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| **30″ x 54″** | All deniers—55 through 3000. |
| **36″ x 54″** | Lengths to be supplied can vary according to set constructions and denier. |
| **30″ x 66″** | 36″ x 54″ used advantageously for extra long lengths. |
| | 30″ x 66″ used advantageously for wide fabric construction using high end count per beam. Celanese® |

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Celanese® CONTEMPORARY FIBERS



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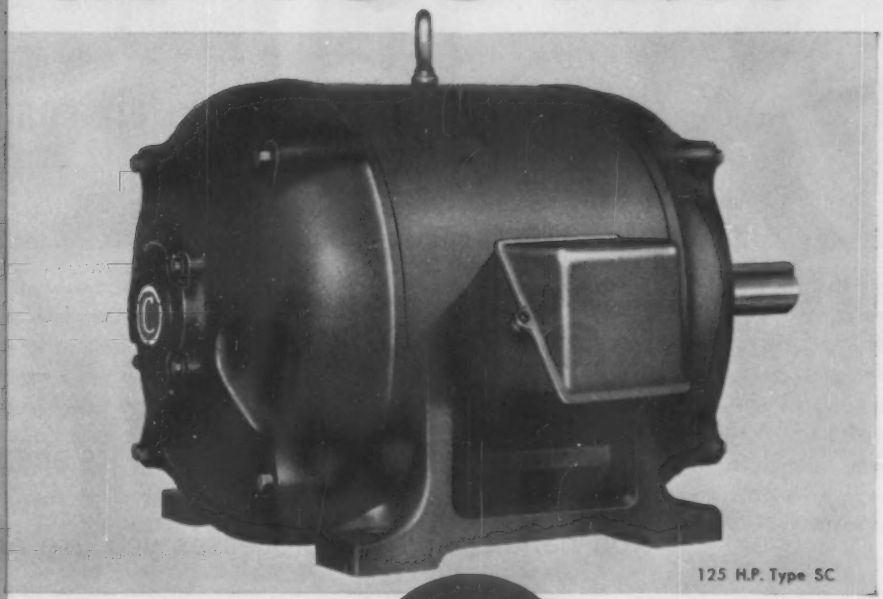
CENTURY HAS THE COMPLETE LINE...

# Big as 400 H.P.



125 H.P. Type SC

small as 1/20 H.P.

WHATEVER YOUR APPLICATION THERE'S A Century MOTOR

## Performance-Rated© to do the job

You'll get the top performance your equipment's designed for... because there's a motor *designed for it* in the Performance-Rated Century line.

Century's technique of Performance-Rating enables you to choose motors with the right size, speed, frame, and torque characteristics to fit—*exactly*—your application requirements.

You can select from a range of 400 to 1/20 h.p.; AC single or polyphase, or DC; drip proof, dust proof, or explosion proof frames. There are optional corrosion-resistant features; constant speed, multi-speed, varying or geared speeds.

Let us prove the value of Performance-Rating for you... without obligation. Call or write your nearby Century District Sales Office or Authorized Distributor.

*Performance-Rated*© MOTORS 1/20 to 400 H.P.

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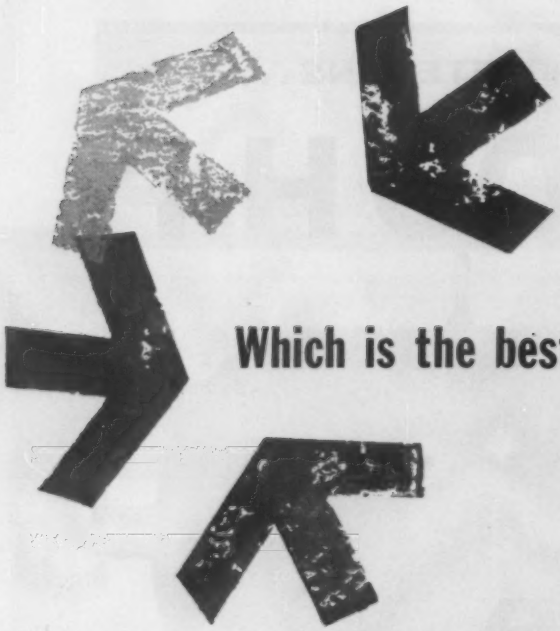

## Which is the best way to air condition a mill?

It depends on your mill. Its size, its shape, the fibers you handle, and the processes you use are all important. And if you want control of temperature as well as humidity, which refrigeration is best? Carrier sells many types of air conditioning and refrigeration. For example, one of the four types of refrigeration shown on the opposite page is best for your mill.

Only Carrier makes all four types and is able to give you an impartial recommendation. For complete information, call your nearest Carrier office. Or write Carrier Corporation, Syracuse, New York.

Carrier



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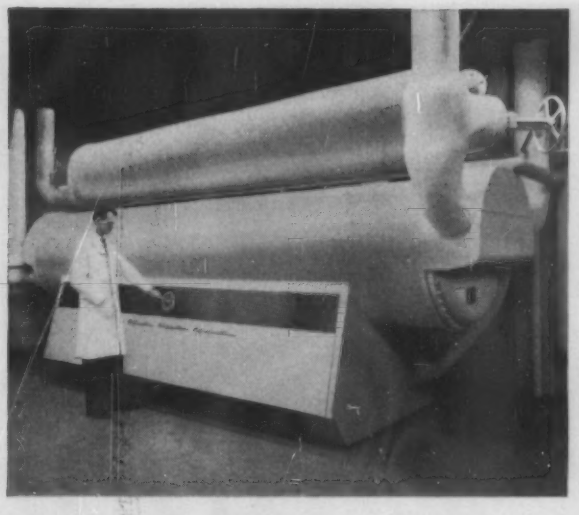
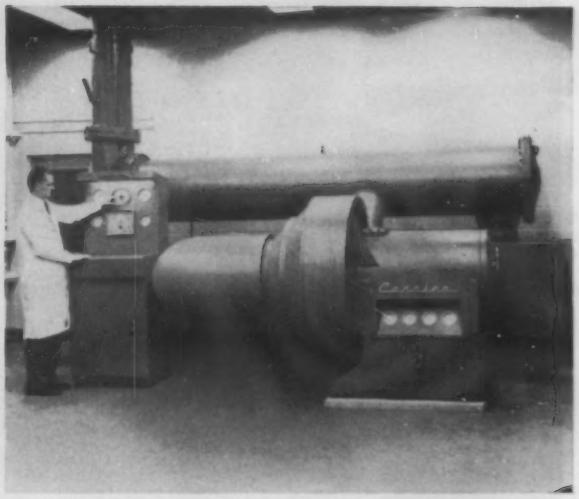
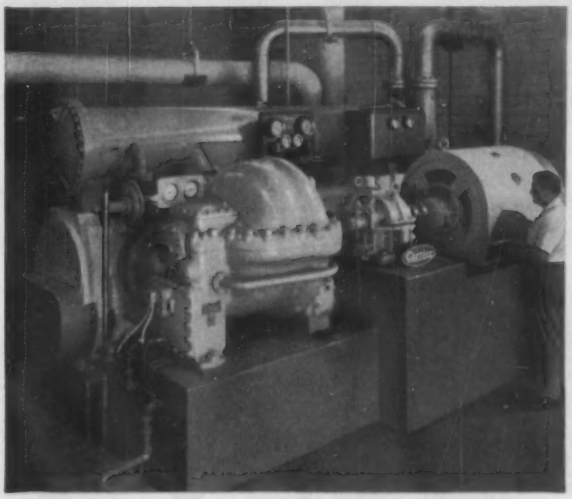


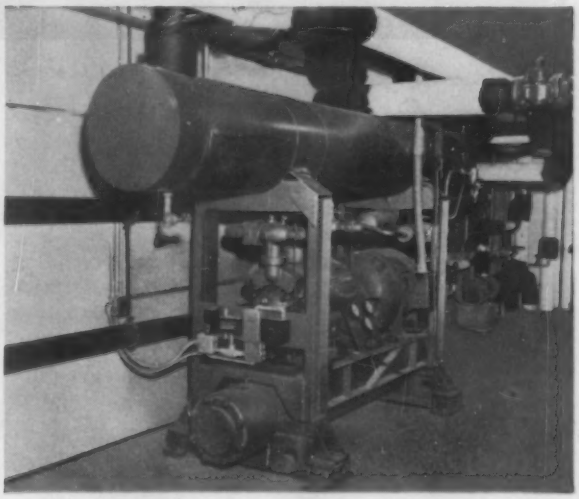
**If you have low-cost steam,** Carrier's new Absorption Refrigerating Machines may be best for you. They cool water for air conditioning by using heat energy derived from waste heat or hot liquids. If you have fluctuating loads, they will operate automatically from full load to zero capacity 24 hours a day, seven days a week, dependably and efficiently. Carrier's new Absorption Machines are available in capacities from 60 to 700 tons.



**If you have low-cost power,** the new Carrier Hermetic Centrifugal Refrigerating Machines may be your best answer. They're the only hermetics with such advanced features as a refrigerant-cooled motor, hydraulic-powered capacity vanes, and electronic self-contained controls for completely automatic operation. Their compactness and light weight minimize space and structural requirements. Capacities range from 90 to 1000 tons.



**If you have heavy air conditioning requirements,** Carrier's famous external drive Centrifugal Refrigerating Machines undoubtedly are best for you. With capacities to 4000 tons, they can provide accurate, automatic control of temperature and humidity in the largest mills. Thousands have been giving dependable service for decades in mills of every size to score top performance records. They are adaptable to many special drives.



**If your mill is small** or if you have limited air conditioning requirements, Carrier Reciprocating Water Cooling Machines may be ideal for you. They're completely "packaged" with compressor, cooler, condenser and controls co-ordinated in design by Carrier engineers. Installation costs are lower and operating performance is more efficient than units assembled from unrelated components. Available in capacities ranging from 3 to 200 tons.

# ...more quality proved POWELL VALVES

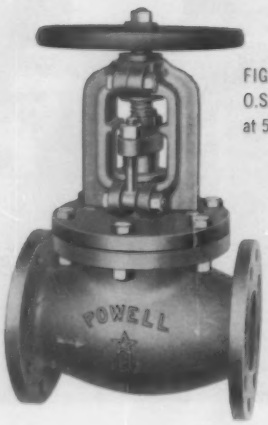



FIG. 2429—Large Size Stainless Steel O.S.&Y. Globe Valve for 150 Pounds W.P. at 500 F. or 230 W.P. at 100 F.

FIG. 1314A—1500-Pound Integral Bonnet Stainless Steel "Y" Valve.

FIG. 2453SG—Stainless Steel O.S.&Y. Gate Valve for 150 Pounds W.P.

FIG. 2342—Stainless Steel Bolted Cap Swing Check Valve for 150 Pounds W.P.

## Designed for long life, designed for dependable service

Consult your Powell Valve distributor for all the facts about quality proved bronze, iron, steel and corrosion-resistant valves. For every flow problem . . . there is a Powell Valve to solve it.

**THE WM. POWELL COMPANY, CINCINNATI 22, OHIO . . . 111th YEAR**



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# First Rule for Success: Study Your Market

A few weeks ago at the Statler Hotel in New York City the National Cotton Council sponsored a two-day meeting aimed at encouraging and improving market research in the textile industry. Although only a fraction of the mills that could profit from market research sent representatives to the meeting, the mills that did attend got an excellent glimpse into one of the vital functions of business management.

Market research—which means simply studying the potential market for a given product to see what sort of demand there is for it—can mean the difference between success and failure of a business. The fact that every branch of the textile industry invariably overbuilds capacity for every product on the market is the most eloquent proof possible that, perhaps more than any other major U.S. industry, the textile industry needs to learn and practice market research.

The overbuilding of gasoline service stations has been a joke for a generation. If price cutting, poor profits to the operator, and failures are the measurements of overbuilding for the market, gasoline service stations have a very worthy competitor in textile mills.

## The Latest Fiasco

Probably the latest instance of mills plunging into a market without first evaluating chances of success is the market for full-fashioned sweaters. About four years ago these sweaters began to catch on with users of textiles, and several outerwear and full-fashioned-hosiery knitters jumped into the market.

Today there are 500 full-fashioned-sweater machines in the U.S. On a two-shift basis, these machines will produce about 2.7-million dozen sweaters a year.

This year the price of these sweaters had to be cut to about the price level of cut-and-sewed sweaters, although it costs about 25% more to produce full-fashioned sweaters; and mills belatedly are now taking a look at the market.

The complete U.S. sweater market is about 6.5-million dozen sweaters, but experts judge that full-fashioneds cannot take more than 1.5-million dozens of the market. So in less than four years capacity has been built up until 45% of it is already excess capacity. Instead of 500 machines, the market will support only about 275 machines running two shifts.

And like true textile men, some of the mills are running three shifts because right now there is about a six-weeks' seasonal spurt of business.

## Loss Is Not Necessary

Of course full-fashioned sweaters have a small share in a small market of the total textile industry, but the same pattern can be traced for almost any textile product you can name. Change sweaters to 80-square print cloth, denim, automobile fabrics, tire cord, gingham, or fancy worsteds; and the pattern holds true.

Mills stand no more chance of making a satisfactory profit out of a textile product overproduced for its market than a fifth gasoline service station at a crossroads does.

Proper study of market potential and competitors already in the market could have saved much of the loss that will inevitably come to mills on full-fashioned sweaters. Such market research can also be a most helpful guide to other mills seeking more satisfactory profits.

A. M. Thomas

Nearly every competitive advantage starts with the machine

## Summertime . . . and the livin' is easy

Any time is the right time — for the kind of quality knit-wear you get with Arrow Latch Needles. Always smooth, strong, and free in latch movement, Arrow Latch Needles are made to Textile's standard of precision. Together with Arrow Flat Stock and Leaded Assemblies, they're backed by a half-century of service to the textile industry.

Quick delivery from stocks in
Reading, Penna., Asheboro, N. C. and Manchester, N. H.

Builders of:
The "Reading" CK-A Circular Knitting Machine
The "Reading" Tricot Machine
The "Reading 100" Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned Outerwear Machine
The "Reading" Braiding Machine
Textile Spring-Beard Needles
Arrow Latch Needles

TMW

Arrow LATCH NEEDLES

*Wire Products Division*
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
*Builders of Textile Machinery Since 1900*



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# What Research Means to American Business

**American industry plans to invest $150 billion in new plant and equipment during the next four years—more than in the five years 1952-1956. It plans to carry out this record investment even though manufacturing capacity has nearly doubled since World War II.** These facts are reported in McGraw-Hill's tenth annual survey of Business' Plans for New Plants and Equipment. They contradict many long-established theories about investment in capital goods.

According to the textbooks, a high and rising level of capital investment is generally followed by a decline. The bigger the rise—so the old theory goes—the bigger the decline will be. But, after a decade of high-level investment and an especially strong rise in the past two years, industry now has plans to keep right on with near-record outlays for plant and equipment. Does this mean some new factor has been added, to change the investment cycle?

## The New Factor—Research

**The latest McGraw-Hill survey points out one new factor which, more than any other, is changing the nature of the investment process.** This is the record outlay planned by U.S. corporations for **scientific research and development**—to create new products and develop new industrial processes. The rapid growth of research in industry, and plans for even more remarkable growth in the years ahead, are shown by the accompanying table.

**This year industry plans to spend $7 billion on research and development — up 20% from 1956. By 1960 it will spend $9 billion—enough to create a major new industry.**

**By 1960 manufacturing industry expects sales to be up 26% —with half the increase in products that were not made in 1956.**

### Growth of Research and Development Expenditures

(Millions of Dollars)

| | 1955 | 1956 | PLANNED 1957 | PLANNED 1960 |
|---|---|---|---|---|
| Machinery | 408 | 506 | 577 | 704 |
| Electrical Equipment | 950 | 1,149 | 1,310 | 1,637 |
| Aircraft and Parts | 1,038 | 1,558 | 2,274 | 3,161 |
| Fabricated Metal Products and Ordnance | 134 | 165 | 174 | 210 |
| Professional and Scientific Instruments | 185 | 252 | 300 | 453 |
| Chemicals | 440 | 498 | 528 | 617 |
| Paper, Rubber, Stone, Clay and Glass Products | 149 | 174 | 196 | 233 |
| Petroleum Products | 171 | 205 | 225 | 277 |
| Other Manufacturing | 1,038 | 1,279 | 1,388 | 1,557 |
| Non-manufacturing industries | 254 | 310 | 347 | 419 |
| ALL INDUSTRIES | 4,767 | 6,096 | 7,319 | 9,269 |

## What Research Is Doing

Here are some examples of how industrial research is opening up new markets, or compelling the modernization of old facilities:

New automatic controls in petroleum refining will raise the quality of gasoline and reduce the time required for production. A new process for recovering oil from depleted wells promises to multiply our potential reserves.

A new process for treating iron ore will permit the ore to be fed directly into steel furnaces—without the need for blast furnaces or coke ovens.

New turbine engines—made possible by the development of heat-resistant alloys for turbine parts—offer greatly increased power for aircraft, ships and automobiles.

**Altogether, industry plans to introduce more new products in 1957-1960 than in any previous four-year period.** It also plans new processes on a scale that will make much of our present capacity obsolete. These new products and new processes are the secret behind continuing plans for high investment.

One-third of all manufacturing firms are building new plants this year to produce new products, and by 1960 this may account for 10% to 20% of all capital expenditures. At the same time, manufacturing companies report that over half their capital expenditures in the next four years will be for modernization of equipment and introduction of new processes. Thus the preponderant share of new investment will be based on developments growing out of research.

## A New Kind of Prosperity

**The keen interest of U. S. business firms in scientific research points the way to a new kind of prosperity for our economy—a prosperity based on deliberate creativeness.** As long as we can create new products that will offer better value to consumers or cut costs to manufacturing firms, business will continue at a high level—not at fever pitch, perhaps, and it is to be hoped not at an inflationary pitch. But based on a steady stream of new products and processes, we can have a high level of general prosperity that defies the old laws of boom and bust.

## It's Not Automatic

Of course, there is no guarantee. New products do not spring up by magic as the medieval alchemists hoped they would. They are found as the result of long and expensive effort in laboratories and pilot plants. This effort requires an increasing number of trained scientists and engineers. In 1957 alone, manufacturing companies report they will need 7% more of these highly trained people in research and development. And by 1960, they will need an additional 15% to carry out planned research programs.

**The effort to maintain prosperity — as well as the national defense effort — will depend increasingly on this supply of scientific and technical personnel. But if we can supply the people, industry now has the plans for a research effort that will put an end to the spectre of idle plants and idle workers.**

*This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nation-wide developments. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.*

Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Textile World

Volume 107, No. 7. July, 1957

# The People Who Can DISRUPT COMMUNICATIONS

• Most communications are a simple matter of getting a message from "here" to "there"—from sender to receiver. Then why do your messages sometimes get intercepted or distorted? How do rumors start? Who feeds the grapevine?

• The answer is people—people you may never have thought about. Yet between the sender and the receiver there are six other people who can and often do disrupt or ruin a communication. Here's a look at these people and the parts they play, with some tips on how you can keep them from making trouble for you.

By **WILLIAM G. SHEPHERD**, Research Institute of America, Inc.

"EIGHT PEOPLE INVOLVED in every communication effort! Are you crazy?"

"Who, besides the one who sends the message and the one who gets it?"

These indignant questions were hurled at the author during a workshop on conference leadership at Clemson House in South Carolina. The hurlers were the managers of a dozen mills in the area.

The first questioner overstated the case. The fact is that most messages are routine. We handle them automatically: call our wife on the phone, send a report to a colleague, write a letter about ordinary business matters. All we have to think about, if we do even that consciously, is the individual to whom the message is addressed. It's because the bulk of our communicating is so simple that we can produce such a resounding flop when an important or critical communication need comes along.

The men at Clemson were skilled executives. Yet they freely admitted that many of their attempts at communicating failed. Why? For a variety of reasons, including poor timing, saying or writing the wrong thing, or using an inadequate medium.

But especially important as a reason for failure was found to be lack of organized information about the people—apart from the two we immediately think of, the sender and the receiver—who are in a position to disrupt or ruin a communication. Everyone knew there were such people, popping up from nowhere. But how to put the finger on them? How to get them under control?

### The Parts People Play

Three years ago the Research Institute of America undertook to identify the culprits, to find out who they were, what they did that muddied the waters and—perhaps most important if control were to be gained—how many different ways the executive had to look in order to guarantee his message would succeed.

Several hundred actual cases of communication breakdown were studied. In each case the questions were asked: "What parts did people play?" "Who were the people?" "How many different people-roles appear?"

The confident conclusion was reached that persons having anything to do with the transmittal of information—helping it or hindering it—always were doing one of eight things. So the executive who knows those eight possibilities can, with considerable assurance that he's covered all the angles, prevent people from blasting unexpected holes in his communication framework.

The purpose of communication is to pass an idea from "here" to "there," from the person who has the idea to the other person or persons who ought to have it. Between those two terminal points, however, lie six types of human obstacle, each one able to block, divert, reveal, change, or otherwise raise hob with the idea.

Here, in a word, is the cast of characters:

• The person who speaks or who writes and sends the message.

• The one who is supposed to pass

it along to someone else or to a group.

- Those who take part in processing the message.
- People who accidentally learn what the message contains.
- The person about whom the letter or report is written.
- Those whom you want definitely to exclude, to keep from knowing what is said or written.
- The individual or group being addressed.
- People who should be sent a carbon copy or kept informed.

You're familiar with all of them. What's vital is this fact: if you keep track of each of these eight "people" aspects of your major communications, you don't have to worry about anybody else.

### Let's Talk Cases

The Clemson conferees, once they were faced with these findings, recalled cases from their own experience that illustrated each of these eight roles that people play. You, yourself, have had some or all of the same experiences (and you have lumps on your head to prove it). A number of the cases are described here for our consideration.

Often, when you are sending a message, you use an intermediary in order to stay within correct channels. At other times you are obliged to give the message to a third person, expecting him to relay it to the individual you want to contact.

You phone Mr. Jones. He's out; so you leave word with his secretary to have him call you. If she fails to notify Mr. Jones of your call, your communication breaks down. Yet you and Mr. Jones, the two principles, have had no part in the failure.

Note the case of the mill manager: "Our state doesn't require it, but I decided to encourage all employees to vote by giving them time off on election day. I'm always careful to avoid bypassing, though; so I sent notices to the overseers that their people could take an hour off with pay if they promised to vote.

"One of the overseers didn't tell his people. Come election day, there was all hell to pay because his employees saw others leaving early, asked why, and then bellowed mightily because they hadn't been told they could take off, too.

"Here was a situation where the message was never relayed to the people it was meant for in the first place."

"Hell hath no fury like a woman scorned," said Congreve. If the poet lived in our day, he might add "or the executive who thinks someone's trying to slip something past him."

This person is usually one who's not directly concerned with the subject matter of your message but is indirectly concerned. The matter falls within his broad, general area of responsibility. Or it's a pet side interest of his. Or he just insists on knowing about everything that's happening.

You send him a carbon copy. If you don't, there's trouble, as in the case cited by a Clemson participant:

"We have a lot of local autonomy in each mill, but we do have corporation chiefs in New York. Well, this day I send a memo out to all my management gang about a change in personnel policy.

"Everything's going along smoothly when—bang!—I hear from the New York vice president in charge of personnel wanting to know what in tarnation I'm up to. I forgot to send him a copy of the memo, and he squelches the whole deal. It would all have been okay if I'd just remembered to keep him informed."

### Some Take Part in the Processing

People overhear the contents of a message either automatically, because they handle it in some way, or accidentally, because they happen to be in a position where it can be seen or heard. Regarding those engaged in the processing, here are the words of one of the Clemson men:

"I'd say the people who handle a communication — the secretary who types it, the one at the other end who opens the mail and sorts it for her boss, the mail boys who carry it around —all are certainly part of the communication picture."

More often than not, they wreck the communication innocently, as one secretary did. Her boss tells the story:

"I have a right smart secretary, but she's a chatterbox. She loves to talk.

"I keep warning her. A good case happened several weeks ago. I said, 'Now, Shirley, this is confidential. I don't want anyone to know about these expansion plans until I'm ready to release them.'

"Couple days later the newspaper calls me and asks me for the story. I question Shirley and she says, 'Why, I didn't tell a soul except Jennie Mae, and I know she wouldn't tell.' "

### They Just Happened To Be There

Like most accidents, the accidental overhearing of our messages is unexpected and almost unpredictable. We can, however, determine who is placed in such a way that, with or without eavesdropping, it is easy for them to overhear.

The more such possibilities we can foresee, the safer our communication can be, if we will take the obvious precautions to make it so.

Here is an example of positioning that makes accidental knowledge of other people's correspondence a common thing:

"Like most mill offices, we have four girls in one room. My secretary has a half-completed letter in her typewriter when one of the other girls just happens to come over to borrow a nail file or something.

"The other girl stops to chat. Meanwhile, something in the partially typed letter catches her eye and gives her a piecemeal picture of the contents. More wild rumors get started that way, in my opinion, than almost any other way."

The two major problems among those people that you don't want to have the information in your message were most difficult of all to sort out. As one man at Clemson said, "Everyone else is supposed to be left out of the affair."

Yes, but "everyone else" is not likely to cause trouble with your communication. In the analysis of the breakdown cases, the search was for specific potential problems: Who, if they learned the contents, could disrupt the communication? Who must be identified and carefully prevented from being sent or told your message?

Eventually the two emerged as: (1) the person or persons about whom the message is written or spoken, and (2) the person or persons who are specifically and intentionally excluded, those of whom you can directly say, "They are not to know."

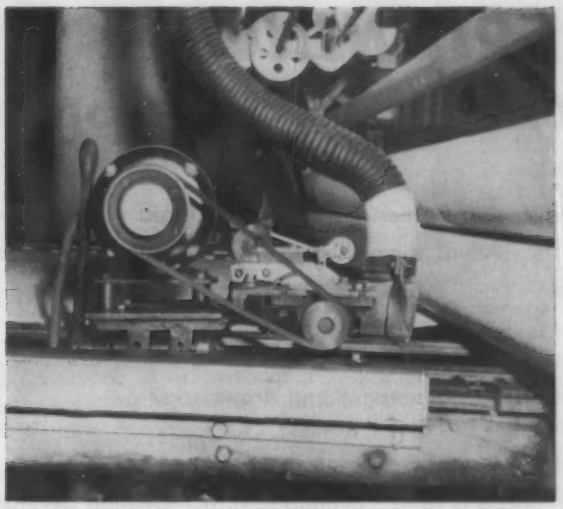
### Wrong Person Gets the Message

Little Johnny, in the weeks before Christmas, plays either role in the whispered conversations between Mom and Dad. If the parents are discussing the young man—"Which do you think he'd rather have, the bicycle or the pedal car?"—Johnny is the subject of the discussion. If they're talking about the bike—"I told them to bring it after dark and put it in the garage"—Johnny is the not-to-know person.

Not too often do communications go so awry that the person about whom a message is written learns the contents and disrupts the business community. When it does happen, however, it's usually serious, as it was in a certain mill:

"We had a young fellow around for about a year as a kind of expediter.

CONTINUED ON PAGE 168

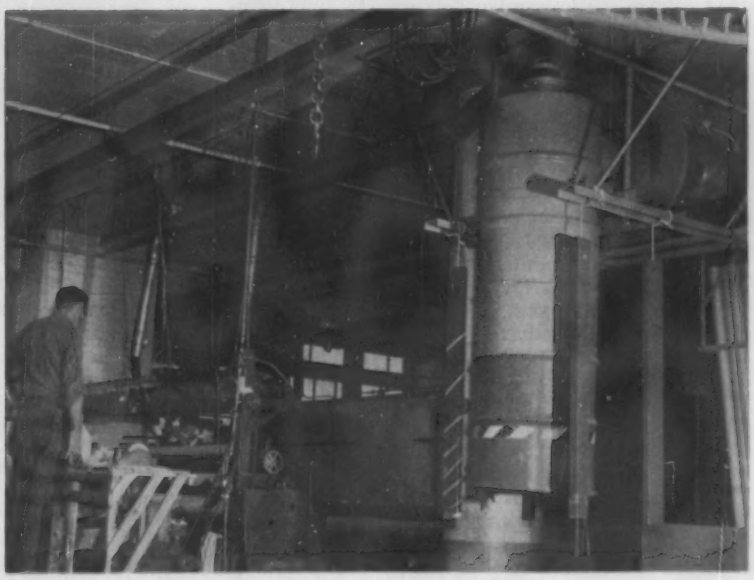


FLEXIBLE PIPES behind the selvage-trimming knives draw the clippings away to the metal cylinder.

# How TENTER CLIPPINGS Are Drawn Away at Munsingwear

• A cylinder placed near the tenter frame has a large fan attached to it to provide suction to draw selvage waste clippings into the cylinder

EDGES OF TRICOT AND OTHER KNITTED FABRICS that are cut off in the trimming operation at the tenter frame at Munsingwear, Inc., Minneapolis, Minn., presented a problem until a suction device was installed. The two men running the tenter frame can now concentrate on watching the fabric as it leaves the drying oven because the trimmed edges are sucked away to a receptacle near the tenter.



THE CYLINDER, which is emptied from the bottom, has a fan at the top to provide suction in the pipes.

Three-inch flexible pipes with nozzles close to the rear of the cutting knives are secured on the selvage-cutting unit. These flexible pipes run into two vertical rigid pipes that run from a 6-in. horizontal pipe located near the ceiling over the tenter frame.

This horizontal pipe runs to a suction cylinder near the tenter frame. Suction is provided by a large squirrel-type fan driven by a 3-hp. motor suspended from the ceiling.

The clippings are drawn through the pipes into the cylinder. A plastic window in the side of the cylinder faces the tenter operator and tells him when the cylinder needs to be emptied.

When the clippings are emptied from the cylinder, which is suspended from the ceiling, a box is pushed under the cylinder. The door at the bottom of the cylinder is released, and the clippings fall into the box.

The clippings are then used to tie up fabric and goods in process.

# DIRECT SPINNING—
## A Major Cost-Cutting Development

**Seven direct-spinning frames now being produced sharply cut yarn-manufacturing costs. All of them eliminate the roving process; some cut out drawing also.**

- **What is direct spinning?**
- **How does it work?**
- **What are its advantages and drawbacks?**
- **Who makes the seven frames?**
- **What are the differences in them?**

**This special report is a world roundup of direct-spinning developments. All the frames now on the market in the United States, Europe, and Japan are covered.**

**By WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

YARN MANUFACTURING COSTS may be on the verge of another big cut.

At least six of the world's spinning-machinery manufacturers now have direct-spinning systems that eliminate the roving process. Some of them cut out both drawing and roving.

Since one-process roving was developed and installed in mills in the late 1930s, few new developments in yarn manufacturing have had the cost-cutting potential of direct spinning.

A single-process roving operation (fly frames) accounts for about 12% of the direct labor cost through spinning in most mills producing medium to fine numbers, and two-process drawing adds another 5%. The elimination of these costs would cut the average labor cost through spinning of 30s carded yarn from about 14¢ a pound to 11.6¢ a pound and of 60s combed yarn from about 20¢ to 16.6¢.

In coarse-yarn mills, where the roving and drawing processes account for about 7% of labor costs through spinning, savings would be smaller. For 8s carded yarn, costs would drop from about 8¢ a pound to 7.1¢ a pound.

### Actual Roving Costs Vary

These figures are only generalizations. A more-detailed breakdown of roving costs shows that roving accounts for 6 to 12% of labor costs through spinning in mills producing 8s to 10s carded yarn and 12 to 20% in mills spinning 30s to 40s carded yarn. In combed-yarn mills spinning 50s to 60s, the roving labor cost ranges from 10 to 20% of total spinning costs.

Extremely efficient carded-yarn mills spinning 20s to 30s might have a labor cost for roving as low as 8 to 10% of the total spinning costs, but these mills are in the minority.

Other cost improvements a little harder to nail down would lie in the variable overhead costs—power, maintenance, etc. Less-tangible gains in some mills might be improved evenness, break factor, appearance, ends down, and waste losses. These benefits are credited to the elimination of the roving process that reverses drafting, since reversed drafting disturbs parallelization of fibers and can cause gouts, cockled yarn, and break-backs.

### U. S. Mills Install Direct Spinning

U.S. mills that are trying direct spinning are mostly coarse-yarn mills. Most of them are spinning 4s to 8s on U.S.-made direct-spinning frames. The yarns are mainly for tufted carpets, bags, shop towels, and other similar heavy end products.

In the last two years at least a dozen mills installed Saco-Lowell or Whitin equipment. Most of these installations consist of one or two frames for test purposes, but there are some larger production installations.

Bear Brand Hosiery Co., Kankakee, Ill., last year installed one Japanese OM-S frame to spin medium numbers of carded and combed knitting yarns. A second and larger installation will soon be made in a Southern mill. Over 600,000 of these spindles are in use in Japan and other foreign countries.

American Thread Co., Willimantic, Conn., for several months has been testing the one-side Zinser frame to spin 4s to 12s.

The nearest Nastrofil frame, installed about two years ago, is at National Textil Manufactuera, S. A., Guadalajara, Mexico.

Phenningsberg has no installations in the Western Hemisphere but since 1954 has made a number of production installations in large German and Belgium mills.

### Mechanical Features Differ

All the frames are similar in principle but vary mechanically. Four frames are limited to the production of coarse yarns; three can produce a wide variety of coarse to fine numbers from cotton and synthetic fibers. Several frames spin short and long fibers on the same drafting system with a minimum amount of roll setting.

Drafting systems vary from three to five zones, and drafts range from 3 to 600. Most drafting rolls are spring-weighted.

Two frames have spindles on one side only, and three require special drawing to prepare the supply package.

### Cans Have 5- to 14-In. Diameters

Cans used for feeding range from 5 to 14 ins. in diameter, and sliver is bicoiled in some of them. Feed cans are placed inside two frames and alongside four. One frame feeds from a creeled bobbin 16 ins. in diameter

that weighs 11 lbs. Overhead creels that pull sliver from large cans are required by three frames.

Several frames spin 1- to 3-in. staple; others spin staple up to 9 ins. long. The Italian frame can process low-grade stock and spin from card sliver. One American frame spins 55-grain card sliver into 60s yarn with a draft of 106. The Japanese frame spins from 12s to 120s yarn and drafts to 600.

### Direct Spinning Presents Problems

There is no doubt about the potential savings of direct spinning, but at its present stage of development most mills are hesitant about adopting it. Some of the things they raise questions about are:

1. Most of the machines are still more or less in the development stage. One German manufacturer has brought out three new models since 1954.

2. Some of the frames installed in American mills functioned well at break-in speeds but gave trouble at maximum speeds.

3. The initial cost of direct spinning and auxiliary equipment for U. S. mills is usually higher than for conventional equipment. Special drawing frames required by some systems run up the cost even more.

4. Most of the frames are large and require extra floor space.

5. Overhead creels are awkward and collect lint and fly. Special creelers are required for several frames.

6. Mills installing coarse-yarn frames are usually limited to the production of coarse yarns.

7. A large amount of stock in process is required in some instances.

8. One frame has a small supply package that limits its efficiency on coarse yarns.

### Casablancas Pioneered Principle

Direct spinning had its beginning in 1924 when Casablancas patented a "double drawing system" with a twisting tube in the middle that condensed the first drawing and gave it a false twist. The twist was taken out in the second drawing, and the sliver was spun on a slubber. No practical use was made of the idea.

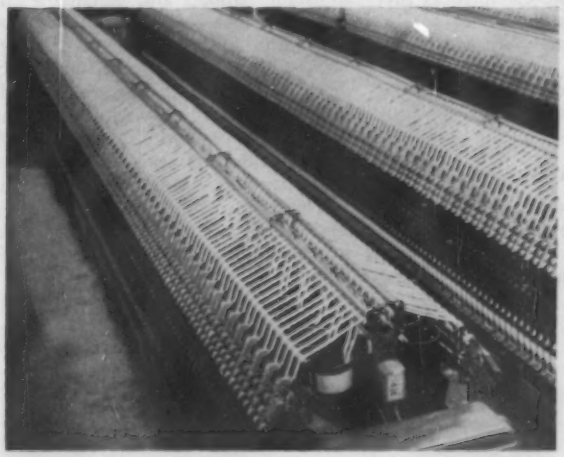
Then Sachs. Machinenfabric vorm, Richard Hartmann in 1928 built a "combined drawing system" based on the Casablancas patent, and for the first time good yarn was spun directly from drawing sliver.

Three lines of rolls were used in the first drafting section of the machine to perform the slubbing action; and two lines of rolls, similar to Casablancas double-apron drafting, were used to do the spinning. Drafts ranged from 40 to 240.

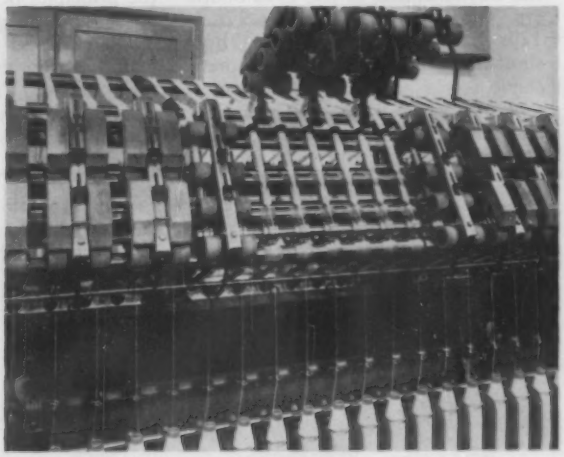
The machine attracted a lot of interest and was tried out in a number of German mills. But the frame failed to establish itself because of its complicated design and difficulty of operation. The basic principles of the Hartmann drawing system, however, are incorporated in practically all direct-spinning frames now in use.

# How the SEVEN SYSTEMS Work

## NASTROFIL Offers Three Drafting Systems



TWO-SIDE NASTROFIL FRAME uses 9-in. feed cans. The manufacturer claims that an operator can change one can per minute.



DRAFTING SYSTEM has six rolls for fine yarns and five rolls for coarser numbers.

The newest Nastrofil direct-spinning frame, announced about two years ago, spins 5s to 40s carded and 32s to 70s combed yarns. With drafting modifications, the frame can spin long-staple synthetic fibers.

The frame is fed from 9- or 12-in. sliver cans, either from inside two single-side units or from outside one unit. Two-side frames require 9-in. cans bicoiled on special drawing.

Six-roll drafting is used for fine numbers, and a five-roll system is used for coarser numbers. Special four-over-five drafting is available for spinning synthetic fibers between 3 and 4¾ ins. long. The six-roll system has five zones of forced partial draft, and the other systems are divided the same way.

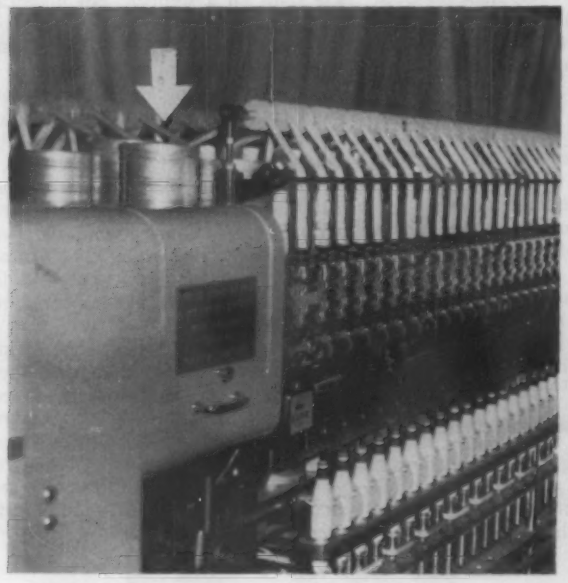
### Drafts to 350

Drafts range from 31 to 250 for 5s to 40s carded yarn, 160 to 350 for 32s to 70s combed yarns, and 120 to 150 for yarns made from long-staple synthetic fiber.

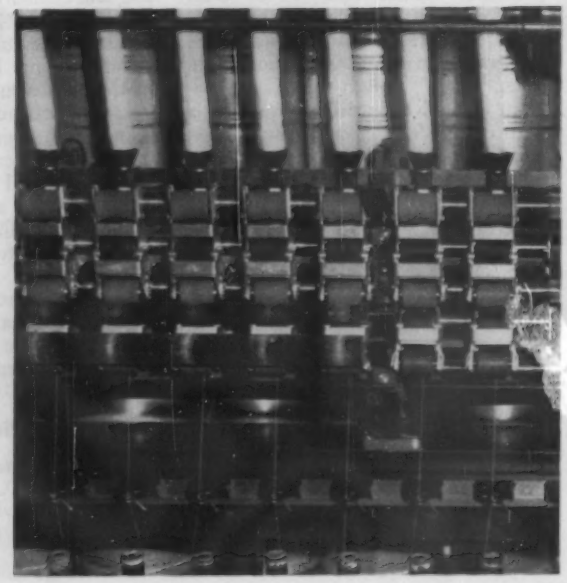
The Nastrofil system does not require high-quality or extra-clean fibers; and coarse numbers can be spun directly from card sliver.

The frame is made in Italy by A. Carniti & Co., Como, and sold by Soc. Nastrofil, Bergamo.

## OM-S Drafts to 600 on Combed and Carded Yarns



OM-S FRAME uses supply cans (arrow) that hold about 3.5 lbs. of roving.



DRAFTING SYSTEM combines the Casablancas roving and spinning roll arrangements.

The OM-S Super High Draft direct-spinning frame, introduced to American manufacturers at the 1956 Southern Textile Exposition, spins 12s to 120s yarn from fibers ranging from short-staple cotton to 3-in. synthetic staple.

A 3-in.-gauge frame is 37 ins. wide and 5 ft. high. The small supply cans are placed inside the two spinning sides of the frame.

### Casablancas Drafting Is Used

The drafting system has five rolls. The first three are in a vertical position and the next two are set at a 60° angle. The drafting arrangement combines the principles of the Casablancas roving and spinning systems.

Drafts to 20 are produced in the roving section and to 30 in the spinning section. Fiber is controlled by collectors between each pair of rolls or aprons. Cradles are spring weighted.

### Automatic Clutch Starts Spindles

Each spindle operates independently of adjacent spindles, and an automatic clutch starts the spindles a fraction of a second ahead of the drafting rolls. Other features include pneumatic clearers, roller-bearing spindles, adjustable lappets and pigtails, a rail to support the doff box, and one-shot lubrication for the head-end gearing.

To fill the supply cans, an OM-S drawing frame or change-over is used. The machine fills from four to eight 5- to 6½-in. cans at each delivery. A yardage indexing head predetermines the exact amount of sliver delivered.

The frame is built by O-M Spinning Machine Co. Ltd., Osaka, Japan, and is sold in North America by Edward S. Rudnick, New Bedford, Mass.

## PHENNINGSBERG Creels 11-Lb. Bobbins

The latest-model Phenningsberg direct-spinning frame, announced last year, has a four-roll drafting system that can spin 20s to 60s carded and combed yarns and synthetic fibers to 4¾ ins. long.

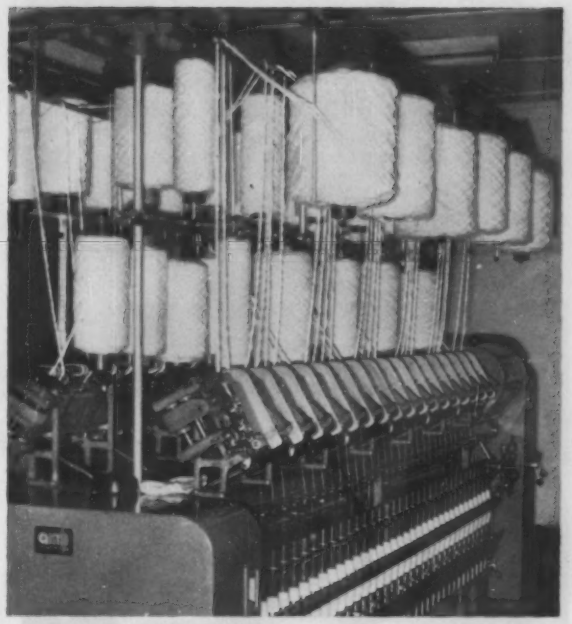
The frame is fed from supply bobbins of drawing sliver that are 16 ins. in diameter and weigh about 11 lbs. each. These bobbins are hung in an overhead creel with special holders. The creel requires no more floor space than the frame itself. The large bobbins are produced on a modified drawing frame that has a winding stand in place of the coiler.

### Four-Roll Drafting Is Used

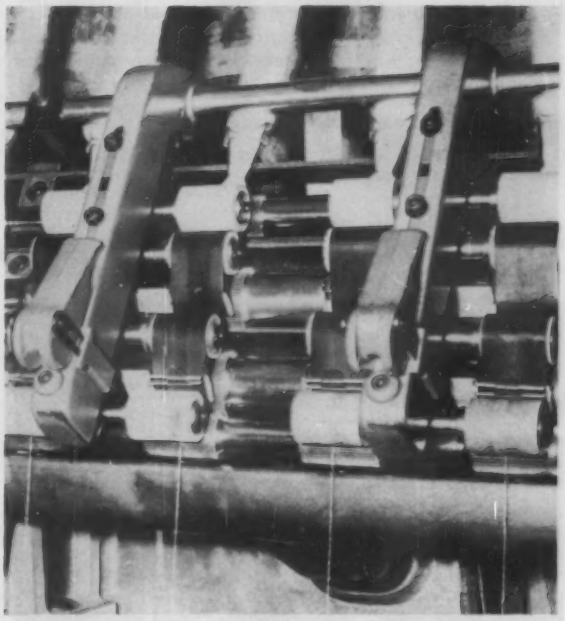
The drafting system has two upper aprons that guide the sliver in a curve around the bottom rolls. Top rolls are spring weighted, and the reversing rail has a flexible mounting for extra fiber traction.

The absence of bottom aprons permits a closer ratch setting, and draft adjustments are possible in wide ranges.

Manufacturer is Josef Phenningsberg & Co., M. Gladbach, Germany.

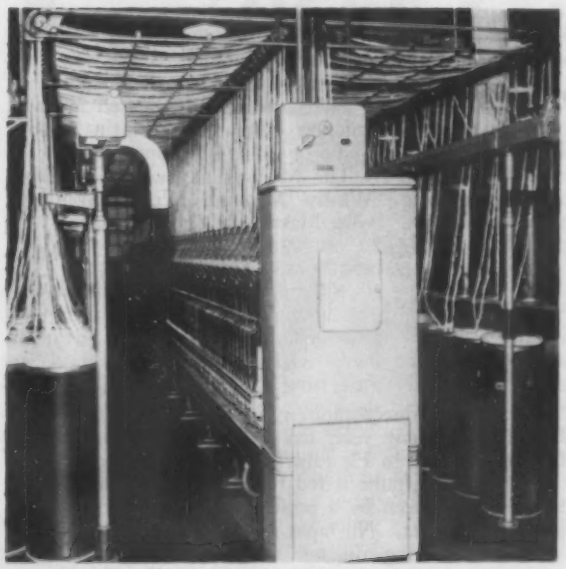


PHENNINGSBERG FRAME spins from 16-in. bobbins of sliver that weigh 11 lbs. each.

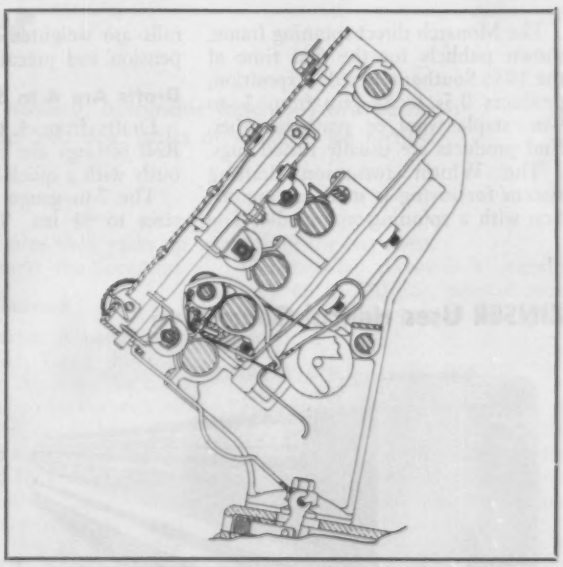


FOUR-ROLL DRAFTING produces 20s to 60s combed and carded yarns from cotton and spins up to 4¾-in. synthetics staple.

## SACO-LOWELL SG-13A Has Gwaltney-Frame Features



SG-13A FRAME feeds from 14-in. bicoil drawing cans via an overhead creel.



SG-3C DUO-ROTH DRAFTING used on the SG-13A frame has four pairs of rolls and three drafting zones.

Saco-Lowell Shops, Boston, Mass., has brought out two direct-spinning frames within the last three years. Yarns produced go into carpets, cordage, mops, and coarse fillings.

The SG-13A Gwaltney frame with SG-3C Duo-Roth drafting, announced last year and still undergoing mill tests, spins 4s to 16s yarn from ⅞- to 1⅛-in. cotton or synthetic staple. A feature of the frame is its ability to spin 16s with a draft of 106 from 55-grain card sliver. Average package weighs 1.25 lbs.

The frame is equipped with 200 New Era spindles, antinode rings, and Pneumafil. The SG-3C drafting element

has four pairs of rolls that permit three-zone drafting.

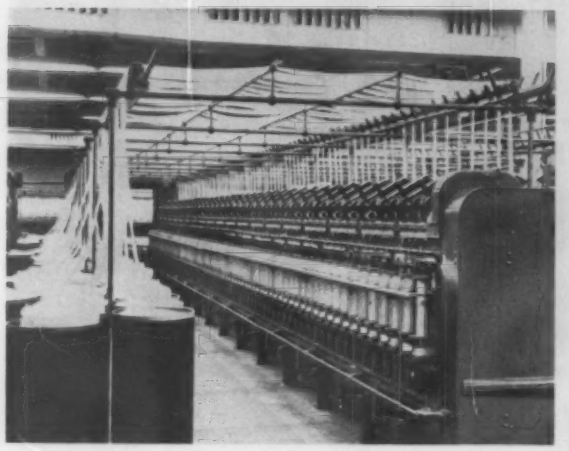
An overhead creel with positive-drive lifting rolls feeds the frame from 14-in. bicoil cans. Floor space required for frame, cans, and aisle is 135 ins. wide.

### Spinster Produces 4-lb. Package

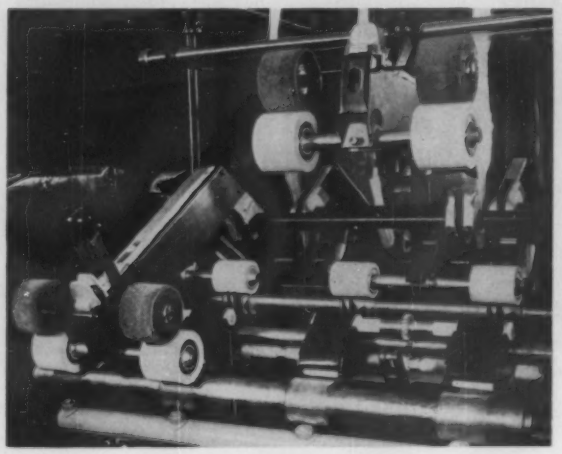
The Spinster, a large-package direct-spinning frame that spins wool or long-staple synthetic fiber, has been on the market somewhat longer than the SG-13A. From 0.5s to 10s yarn are made from 1½ to 9-in. staple.

The frame, built on the Model 4 twister chassis, is equipped with a special F-5 drafting element that drafts from 3.28 to 45.7. Packages weigh to 4 lbs., and sliver weighing to 100 grains per yard can be spun.

## WHITIN MONARCH Spins 3- to 9-In. Staple



MONARCH FRAME produces 0.5s to 8s yarn from 3- to 9-in. staple. A 3.75-lb. package is made on 5½-in. rings.



TWO-APRON DRAFTING SYSTEM has precalibrated top-arm suspension and a spinning-type cradle.

The Monarch direct-spinning frame, shown publicly for the first time at the 1956 Southern Textile Exposition, produces 0.5s to 8s yarn from 3- to 9-in. staple wool or synthetic fiber. End products are usually tufted rugs.

The Whitin two-apron drafting system for roving is used in conjunction with a spinning-type cradle. Top rolls are weighted with top-arm suspension and precalibrated springs.

### Drafts Are 4 to 50

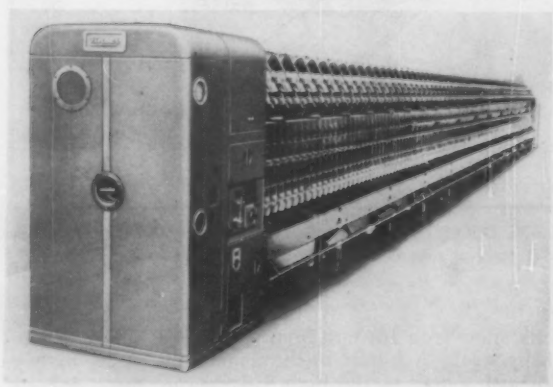
Drafts from 4 to 50 are possible. Roll settings are changed instantaneously with a quick-set ratching device.

The 7-in.-gauge frame permits ring sizes to 5½ ins. Traverse is 11 ins., and up to 3.75 lbs. of yarn can be put on the bobbins. Sliver weighing 100 grains per yard can be spun.

The frame usually is used in conjunction with the Whitin Spool-Matic or Cable-King uptwisters.

The Monarch is manufactured by Whitin Machine Works, Whitinsville, Mass.

## ZINSER Uses Helical-Gear Drive



ZINSER FRAME is fed from regular-size sliver cans. Frame and two 12-in. feed cans per spindle require a 36-in. strip of floor space.

The Zinser direct-spinning frame, introduced in the United States last year, has a five-roll drafting system that produces 4s to 12s yarn from drawing sliver.

The one-side frame is fed from regular-size sliver cans. Spindles are driven by a positive helical-gear drive made by Hispano-Suiza. No tapes or cylinders are required.

The ball-bearing ring-rail movement and the thread guides are completely covered, and a Thoma exhaust system with return-air mechanism keeps them clean.

Underwinding starts when the build is 10 mm. from the end of the bobbin. In changing from S to Z twist, the reversing mechanism is switched over to engage the transmission gear and change the polarity of the main motor.

Manufacturer is Zinser Textilmachinen GmbH, Ebersbach Fils, Germany. The frame is sold in the United States by Watson & Desmond, Charlotte, N. C., and in Canada by Crowther Ltd., West Montreal, Que.

SOCKS are turned on this machine at an average rate of 500 doz. pairs per day. Turned socks drop into the tray, which is raised by air pressure, operated by the feet, to a convenient working height.

REINFORCING THREADS in the high splice and double sole are trimmed off on this device that also helps turn the socks. Up to 200 doz. pairs of socks are trimmed daily. The loose threads are sucked away.

# Union Point Mfg. Co. Turns SOCKS Faster

• To speed up production of men's hosiery, automatic machines are being used in a Georgia mill to allow up to 540 doz. pairs of socks to be turned daily by one operator

SPEEDING UP THE PRODUCTION OF MEN'S AND BOYS' HOSIERY, Union Point Mfg. Co., Union Point, Ga., is turning socks with the help of mechanical aids. With the exception of socks for Government orders, which receive 100% inspection, most sock styles that are turned are now spot-inspected, and time has been saved.

Socks come from the looping section tied in 1-doz.-pair lots. The four turning machines used for plain socks, which were built by Textile Trimming & Boarding Machine Co., are arranged in a row behind the looping machines.

The sock bundles are laid on the table at the right of the turning-machine operator. He unties each bundle and places the socks within easy reach of his right hand.

The rotating aluminum form on the stand of the machine is hollow and is adjusted to turn at 40 rpm. Each sock is held by the operator so the form passes through the open top of the sock. The operator then picks up another sock to repeat the operation.

### How Socks Are Turned

As the form rotates, it passes over a curved rod, which turns the sock inside out. A fixed form on the back part of the machine strips the sock off the rod and drops it on a chute that slides the sock to a stainless-steel tray. This tray is moved by a cam to drop the sock into a handling tray.

The handling tray is bent so the socks fall into the tray all facing the same direction. When a complete dozen pairs of socks has been turned, the tray is raised within easy reach of the operator.

An air cylinder works from the mill's air-supply line to raise the handling tray, and it is operated at the touch of a foot switch by the operator. He ties up the bundle of socks with one sock and places them in a bag supported in a rack that holds the mouth of the bag open.

The machine allows each operator to turn up to 540 doz. pairs of socks daily, but 500 doz. pairs is the regular production.

### Socks Are Spot-Inspected

The bag holds 20 doz. pairs of socks. When full, it is moved to the inspecting section, where the two top bundles are removed. Each sock from these bundles is drawn on a form and thoroughly inspected.

Each fault found in the socks is recorded by the inspector. Knitters are charged a penalty based on the percentage of their work according to the number of faults found in the inspected work.

Socks that are reinforced with 100-den. nylon yarn in the high splice and double sole are turned on a device that also cuts out the loose splicing threads. One operator processes 200 doz. pairs

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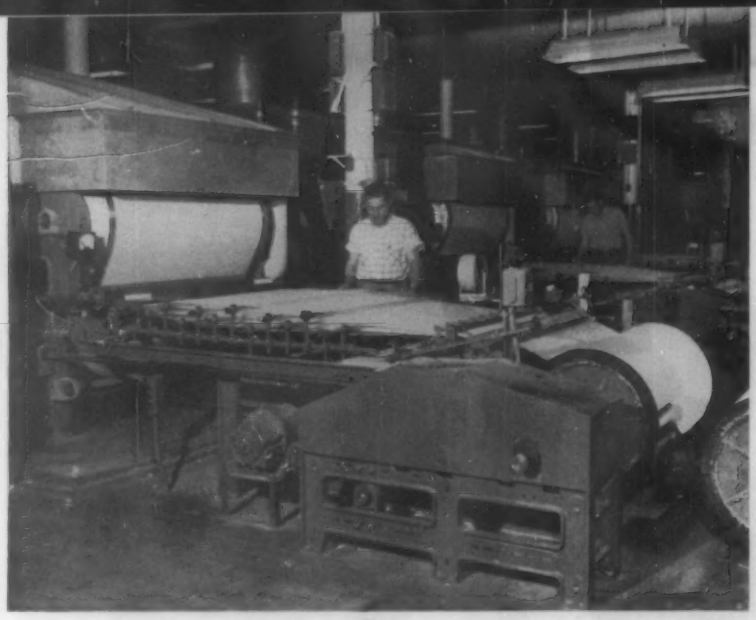


FOURTEEN NEW SLASHERS are in a single line in one slasher room. Slasher speed ranges from 80 to 147 yds. per min.

# 14 NEW SLASHERS at Springs Slash Warps for 9,000 Looms

**• The increasing importance of improved slashing is indicated by this installation of 14 new slashers at Col. Elliott White Springs's Lancaster, S. C., mill. This jackpot installation will provide accurately slashed warps for 9,000 looms.**

THE NEW SLASHERS YOU SEE IN THE ABOVE PICTURE are part of what is no doubt one of the world's largest and most modern slasher installations. They are some of the 14 new slashers at Springs Cotton Mills, Lancaster, S. C.

At present, they are supplying warps for 7,800 looms and will be slashing for approximately 1,200 additional looms soon. Every 24 hrs., these slashers are producing over a million yards of accurately slashed warp. And the slashers are just loafing along on the present schedule waiting for the additional looms to start running. Slasher production the day of this writing was 1,048,660 yds.; it often reaches 1,100,000 yds. a day.

Fabrics woven are broadcloth, print cloths, handkerchief fabrics, poplins, tubing fabrics, and specialties. Fabric width is from 32 to 56 ins.

### Slashers Have Nine Cylinders

The 14 new slashers are West Point nine-cylinder slashers. They replaced 17 old slashers that were mainly three-cylinder models. The old slashers ran at 45 to 80 yds. per min.

The new slashers run at 80 to 147 yds. per min., depending on the weight of the warp. Warp yarns range between 21s and 30s. Section beams in the creel vary from 8 to 14.

Slasher speed is 80 to 90 yds. per min., for example, on a medium-weight warp. This warp has 4,384 ends of 30s yarn, the fabric construction is 100x60, and there are 12 section beams in the creel.

A heavier style has 4,680 ends of 30s yarn, the construction is 97x58, and there are 14 section beams in the creel. The slasher speed again is 80 to 90 yds. per min.

### Speed Is 147 Yds. per Min.

A light set runs at 147 yds. per min. This warp has 2,724 ends of 30s yarn, fabric construction is 60x46, and there are eight section beams in the creel.

Each slasher has a G.E. speed indicator.

All slashers have nine cylinders of 30-in. dia. The first three cylinders nearest the size box of each slasher are covered with Teflon.

Three slashers have double size boxes and are used to slash heavy warps. The other 11 slashers have single size boxes. All size boxes were designed by Springs engineers and were built to their specifications.

When a warp is slashed from 14 section beams on double size boxes, the yarn is split back of the size boxes. Yarn from six beams goes through one box, and yarn from eight beams goes through the other. Consequently, the yarn is slashed well at the high speed.

### Warps Are Leased Often

Warps are leased at every warp; and on special styles, they are leased more often if necessary. On doffed warps, a 3-in. strip of slasher tape divides the lease of the old and new beams. The tape is split in the center, and half is left on each beam.

Loom beams have 22-, 24-, and 26-in.-dia. heads. They are 32 to 56 ins. wide; the 32-in. beams are wide beams with false heads. The beams are doffed with overhead slings that swing back out of the slasher tenders' way for easy removal.

Selvage ends are slashed along with warp ends. Then they are separated

from the warp body by porcelain open eyes after they leave the drying cylinders. Selvages have 12 to 14 ends.

The bottom roll of all size boxes is stainless steel; the top roll is rubber-covered. The temperature of the size in the size box is 204 to 206° F. and is maintained with Taylor controls.

### Pressure Control Improves Warps

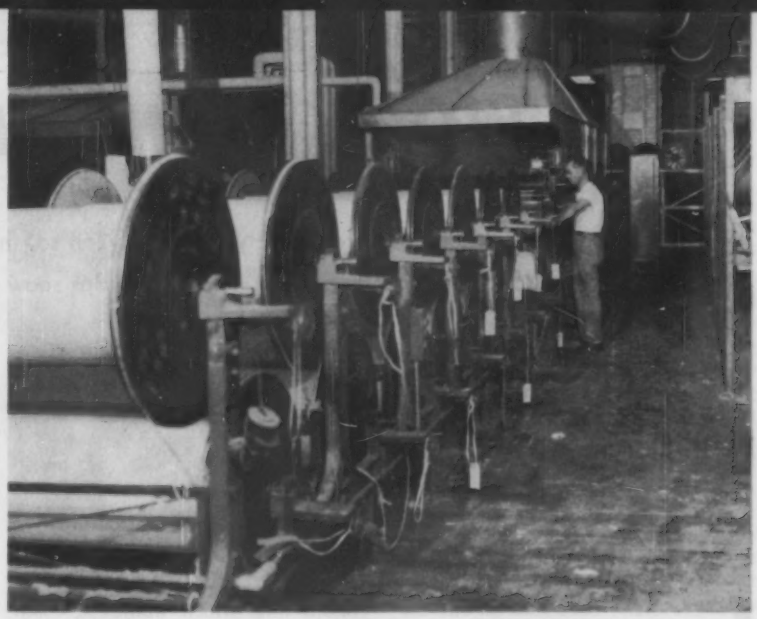
A lot of work is being done on applying pressure to the squeeze rolls. Pressure on a pack roll is now 40 psi. on a 5-in.-dia. cylinder. Maximum squeeze-roll pressure at present is 30 psi.

A solenoid valve is being installed in the air-loading line to the 5-in.-dia. cylinder. With this system the squeeze-roll pressure is reduced at high speeds so that the size is not squeezed completely out of the warp. Consequently, warps are sized uniformly. Size content is approximately 15%.

The cylinders have Johnson rotary pressure joints. The temperature of all cylinders is 280° F.

Section-beam creels were designed by Springs engineers and have space for 8 to 14 section beams of 28-in. dia. Antifriction beam bearings are used. Ropes that pull from live weights apply the proper friction to the yarn.

The moisture content of warps is checked carefully. The content is 6% on all styles except tubing fabric, which is lower. The moisture is controlled with Brown Moist-O-Graphs.



STAINLESS-STEEL HOOD over the drying section has required a lot of development. Now it dries warps adequately at high speeds with employee comfort.

Hoods for the drying sections are stainless steel and were designed by Springs engineers for proper drying with a minimum of ambient heat for the comfort of employees.

Size is prepared in a basement under the slasher room and is pumped to the slashers. New stainless-steel cooking equipment was supplied by Textile Shops. There are six cooking kettles that finish 232 gals. of size each. Five storage kettles, each with a capacity of 500 gals., are used.

The hugeness of the slasher installation is shown by the amount of starch

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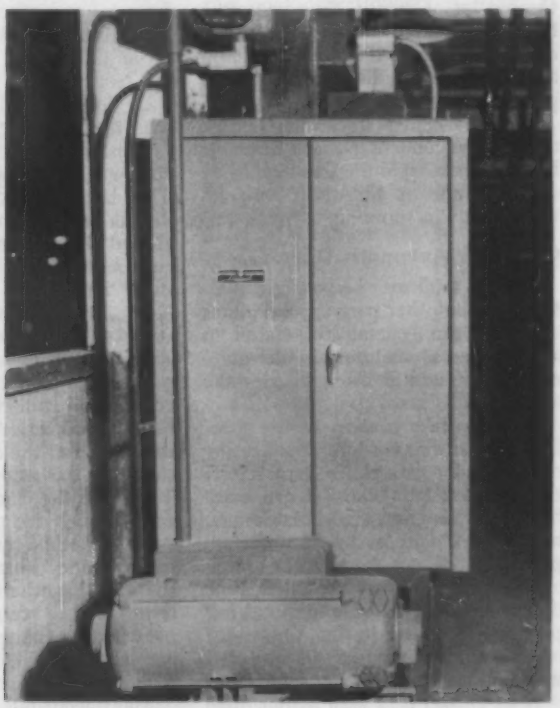
SIZE-PREPARATION EQUIPMENT is under the slasher room. All equipment is new and is positively controlled by instruments.



CONTROLS FOR DRIVES are also in the basement, where they are completely out of the way. Periodic checking prevents trouble.

# Tips on WOOL BLENDING

Are the fabrics made from your yarns cloudy? If so, these pointers on how to improve poor blending might help. These tips show how to—

- Mix and apply emulsions
- Use the Fearnaught system
- Set pickers correctly

By WILLIAM J. CROFTS

INSUFFICIENT BLENDING OR THE UNEVEN APPLICATION OF EMULSION in woolen mills creates problems such as uneven roving and yarn weights and erratic changes in draft at the cards that make for bad spinning conditions. Where two or more colors are used in the blend, streaky yarns and cloudy fabrics result.

Modern spinning frames don't tolerate such a range in roving weights or condensing as did the mule; so to get the best carding and spinning results, the blends must be more carefully prepared.

Carders have often experienced trouble with a new lot of stock when the old lot of exactly the same stock has been running perfectly on several cards. Inadequate blending or uneven application of emulsion or both are generally to blame.

Well-moistened stock drafts slack on the tape condenser and is desirable for the best spinning results. Dry stocks tighten up the drafts with adverse effects in spinning.

### Check the Automatic Oiler

Parts of a lot may be properly moistened, while other parts are dry. This condition can generally be traced to an undetected failure of the automatic oiler, and it often puzzles the carder.

The moisture content in the stock has a direct effect on the condensing of the roving, which in turn affects the yarn tests. Well-moistened stock helps the condensing because the moist fibers more easily form a compact roving.

Moisture also binds the fibers more closely together in spinning. A few pounds are added to the yarn tests, or the standard test may be obtained with less twist if desired.

A six-breaker card with two or three broad-band feeds would be needed to break up the uneven blending of an Oxford mix, which would be costly and impractical. An all-white blend for piece-dyed fabrics is assumed to need less blending; but if it is made of stocks such as virgin wool and reclaimed stocks, thorough blending is essential to get smooth, even shades in the fabric.

Virgin wool has a greater capacity for absorbing dye, and it takes on a deeper shade than the reclaimed wool. The result is a mottled or cloudy appearance in the cloth.

### Wool Absorbs Emulsions

Oil and water emulsions were originally concocted for and intended only for wool and other animal fibers that will absorb moisture. Cotton and rayon fibers tend to become stringy and soggy when they are wet, and they do not card and blend evenly with the wool fibers.

Most synthetic fibers carry the emulsion on the surface of the fiber. They become sticky and adhere to the Peralta rolls to cause the web to wind around the dividing rolls on the tape condenser. This situation causes a sharp increase in end breakage and heavy, lumpy ends.

To get the smoothest yarns from synthetics blends and cotton or rayon mixes, mix all the wool stocks together and run them through the blending picker. Apply all the emulsion, and add the cotton or synthetics stock to the moistened wool stock. Then give the whole blend two more runs through the picker.

This method moistens the cotton or synthetics through contact with the wool. Synthetics blends give best results if they are run as dry as possible with just enough emulsion to combat static and aid in condensing the roving.

Many wool oils are on the market that are ready prepared to mix with hot water to form an emulsion. Manufacturers' directions should be carefully followed to be sure of an emulsion that will not separate. Mills that make their own emulsion with untreated oil should observe these rules:

Measure the required amount of water in the emulsion tank, heat it to the boiling point, and dissolve the mixing agent in the boiling water before you add the wool oil. If not properly mixed, some of the oil rises to the surface and makes a sticky mixture at the top of the tank with a thin, watery solution at the bottom.

Some mills that make high-quality fabrics prefer a rich, oily emulsion and claim the finished fabrics have a better hand. All emulsions penetrate the fibers better when they are applied hot.

The amount of emulsion to be applied to the blend varies with the types of stock in the blend. Coarse-fibered blends such as carpet wool, fleece alpaca, or mohair will not absorb and retain as much emulsion as fine wools.

A good average weight of emulsion for these blends is 25 to 30%. For fine-wool blends, 50% by weight is not too much for good results, especially if the wool is spongy or springy.

### Emulsion Increase Helped One Mill

In one instance where a three-run olive-drab yarn was made, the wool was an excellent quality but the yarn tests were not up to expectations. The superintendent, accustomed to running coarser blends with 25 to 35% emulsion, thought that 35% emulsion would be ample. Good results were not obtained until the percentage of emulsion went to 50.

There are some exceptions to using large amounts of emulsion on fine-wool blends. Some fine wools contain neps or short fibers, which tend to pill badly when they are wet. The action of the picker and the coarse wire of

the first breaker card roll these fibers into small, tough pills.

Many pills card out on the fine wire of the finisher card, but some pills get through and cause spotted cloth. When this trouble is encountered, run the blend as dry as possible consistent with good results.

In making nubs, which are enlarged specks, moisture and soap are two of the mediums used to roll and toughen the nubs. The emulsified oil in the emulsion is similar to soap.

### Check Stock for Moisture

To get the same moisture content in every lot, all the various stocks must be checked for moisture content and allowances made for excess moisture or the absence of moisture. Dyed stocks may vary greatly in this respect.

Ignoring moisture tests where there are two or more colors in the blend may throw the lot off the standard shade. Testing for moisture before the stock is weighed in the blend is just as important as matching the dyed stock for the correct shade.

A mill may have an order for 10,000 lbs. of Oxford with 80% white and 20% black with the order split into two 5,000-lb. lots. The dyehouse may dye 1,000 lbs. of black for the first lot, which is delivered to the blending room dry. A week later a second batch of 1,000 lbs. is dyed and delivered to the blending room with 10% moisture.

If moisture tests are not made, one lot will be off shade. The scales at the blending picker will weigh 1,000 lbs. of stock for the first lot but only 900 lbs. of actual fiber for the second lot.

Make sample lots for shade, yarn strength, operating qualities, and fabric weight and appearance. These small lots may have some components that weigh less than 1 lb.; so they need careful weighing on scales that register fractions of an ounce.

There are many systems of blending; but they all have one basic principle—the sandwich blend. Various colors and classes of stock are laid down layer upon layer on a roomy floor space near the blending picker. If the entire blend is carefully built up with many thin layers, this method is satisfactory.

This system is used in many mills, but labor costs are much higher than other systems because building a 10,000-lb. blend into a huge pile requires many hours of work. One of the lowest costs for blending can be obtained with the Benoit system.

Laying down the blend can be eliminated with two all-iron Fearnaught pickers in tandem. Two or three men can keep this process in continuous operation.

The various stocks and colors are wheeled into the blending room and arranged in a semicircle around the weighing scales. The operator weighs the correct-proportioned amounts of each stock or color in 100-lb. lots that drop into an elongated feed hopper. This process is repeated until all the blend is used.

The automatic oiler is installed at the first table apron because the emulsion must be applied on the first run through to insure even distribution.

From the first picker, the stock is blown through a pipe to a distributing chamber on the ceiling. From here, the stock drops into the hopper of the second picker. From the second picker, the stock can be blown directly to the card storage or to a baling press.

Production is continuous except for brief intervals for machine cleaning. While the system is nearly foolproof, the human element is always present. The key man in this operation is the man who weighs the stock, and only reliable workers should be trusted with this job.

When blends such as 80% wool with 20% nylon are run, the emulsion should not be sprayed directly on the synthetic fibers. The wool stocks can be run through the first picker and the emulsion applied.

The moistened stock should be diverted to a ceiling condenser and deposited in a pile on the floor near the weighing scales. The 20% synthetic fiber is then added to the 100-lb. weighings with an allowance made for the weight of the emulsion added to the wool. The whole blend is then put through the pickers.

### How To Set Pickers

The Fearnaught picker will handle any class of stock if the settings are made right. Built like a woolen card, this machine gives the stock a coarse carding action and breaks up lumps of fiber or yarn waste to prepare blends for the carding operation.

The single-action picker acts only once on the stock at the point where the cylinder teeth contact the stock at the feed rolls. The Fearnaught has several points of contact where a combing and blending action takes place.

This type of picker will break fibers when it is operating on fine wools if the worker rolls are set wrong. Broken fibers can reduce good yarn tests. If the settings are made right, seven-run yarns from AAA wool and heavy carpet yarns from rough wools can be made from stock off the same picker.

The rugged teeth of the cylinder and all the complementary rolls are set in straight lines instead of in spirals as they are on a woolen card. The teeth of the workers and strippers can then intersect the teeth of the cylinder, and the teeth of the strippers can be set deep into the worker teeth.

### Set Workers to 3/8 In.

This setting should be maintained at all times because it keeps the worker teeth clean on any stocks. The workers are adjusted vertically for setting into the cylinder teeth about $\frac{3}{8}$ in. for short stocks and increased blending. If less action is desired, the settings may be made open to a level with the points of the cylinder teeth.

Horizontal adjustments can be made to set the workers into the stripper teeth about $\frac{3}{8}$ in. The teeth of the strippers must always be set $\frac{3}{8}$ in. into the points of the cylinder teeth so that the cylinder keeps the stripper rolls clean.

If these settings are observed and the doffing roll is doing its job of clearing the cylinder correctly, the machine is practically self-cleaning. The doffing roll has straight teeth that should intersect the cylinder teeth at least $\frac{3}{8}$ in.

The leather strips that act as a brush to clear the cylinder have a fanning action. These strips of leather must be replaced often on rough, long stock because they help to keep the cylinder clear.

Recommended surface speed for the single-action picker is 9,000 ft. per min. The surface speed of the larger Fearnaught cylinder should be about 1,200 ft. per min. This slower speed on the larger cylinder has a gentler action on all textile fibers.

One run of a blend on the Fearnaught picker is generally equal to two runs on the single-action picker.

### Electric Magnets Are Best

Two types of magnets are used for drawing tramp iron out of the stock. Permanent magnets are guaranteed to retain their strength for many years. Electric magnets are stronger, but they require a direct current.

The best place for a magnet is directly over the top of the spiked apron where the flow of stock is the thinnest, and the speed is slow. To save on costs, some installations are made at a bend or elbow in the blower pipe at the delivery end of the picker where only one short magnet is used. This position is not satisfactory because the stock travels at high speed and all the iron is not trapped.

Where two pickers are used in a continuous operation, the installation of magnets on both pickers is an added safeguard to protect the metallic breasts on the cards.

# MATERIALS-HANDLING Show Promotes Automation

- The theme of the Seventh National Materials-Handling Exposition in Philadelphia was "Materials Handling, the Key To Automation."
- The emphasis was on systems of handling rather than any particular type of equipment. Many of the systems can be used in textile mills.

Many systems of materials handling shown by over 250 exhibitors were so specialized for other industries that they could not be used in production in the textile industry. But several systems can be used for shipping textiles.

A few systems are clearly the last developments for automation and are too far advanced for most industries. One exhibitor pointed out to his visitors, "Not all plants are ready for automation, but these machines are ready and are running in several plants."

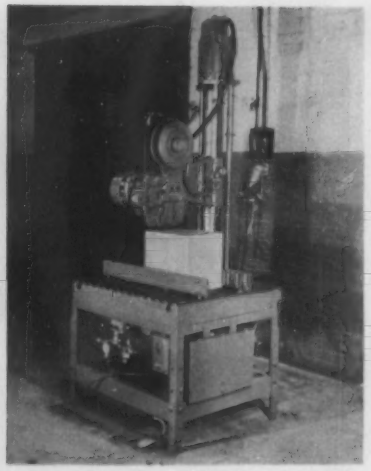
This partciular equipment was a fully automatic strapper and could well be used for shipping finished textiles.

An outstanding exhibit was an electronically controlled machine with an arm that moved objects vertically and horizontally, through slots, turned the objects to any degree of a cycle, released them, and then went back and picked them up.

Conceivably this machine could be the basic design of a machine to creel and doff spinning frames. Certainly without too much redesigning, it could be used to doff laps at pickers and cards.

As usual in most shows, there was a large number of lift trucks. Conveyor systems were next in number of exhibits. For textiles, the most improvements were in strapping machines. Now a textile finisher or finished-goods manufacturer can place unsealed cartons on a conveyor system and see the cartons sealed, weighed and recorded, and addressed to the receiver without an attending employee.

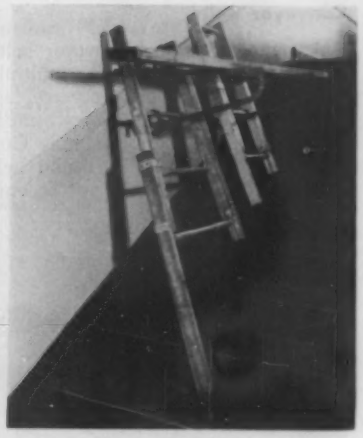
The show was so well attended that it has been changed to an annual show, with the next show to be held in Cleveland in 1958.



### Circular Stitching Machine

A stitching method that cuts and forms stitches from a continuous coil of wire to seal corrugated boxes was demonstrated by Acme Steel Co., Acme Products Div., Chicago, Ill.

The machine simultaneously closes tops and bottoms of filled boxes. Production speed is increased, and product damage is reduced. (A-1)



### Self-Leveling Ladders

A completely automatic mechanical ladder leveler to be mounted on old or new wood or metal extension ladders was demonstrated by Unique Iron Works, Inc., Jackson, Mich.

You just set one leg of the ladder on a flight of steps sideways, for example, and the leveler adjusts and locks itself level. Other uses are on sloping roofs, ramps, and hill sides. (A-3)

### Hardened-Steel Conveyor

A conveyor with no exposed moving parts was shown by Erko Steel Products, Inc., Chicago, Ill. It is driven with a positive-gear drive that cannot slip.

The load moves on hardened-steel rods in straight sections and multiple curves. Operation is quiet, and the conveyor fits into any other conveyor system. (A-73)

### Mobile Storage System

A mobile storage system to reclaim lost space was demonstrated by Dolin Metal Products, Inc., Brooklyn, N. Y. With the system, you can have six, seven, eight, or more rows of storage equipment with only one aisle.

The system is said to add as much as 75% more storage equipment without adding floor space. Cabinets, shelving, bins, racks, etc. are part of the system that rolls easily on dollies. A one-ton load can be moved with only 15 lbs. of force. (A-2)

### Self-Designed Trucks

Carts and trucks were shown by Howe Scale Co., Rutland, Vt. The carts are designed to your specifications from a wide range of options.

The options are: round corners, square corners, all-steel smooth decks, all-steel diamond-plate decks, steel-and-wood decks, all-wood decks, and many types of framing. (A-4)

### Fiberglas Trays

Molded Fiberglas trays for handling, storing, and shipping were shown by Molded Fiber Glass Tray Co., Linesville, Pa. The trays are light in weight and conserve working and shipping space. (A-5)

### Automatic Strapping

With an automatic strapper displayed by Signode Steel Strapping Co., Chicago, Ill., packages are strapped in a steady line with no one around. Up to 1,000 straps per hour may be applied.

Every bundle, carton, or box is packed perfectly straight and with uniform predetermined tension. Each seal is cut and crimped in the same way since employees have no part in the operation. (A-6)

**For more information, circle the A-number on Reader-Service post card.**

### Fiberglas Pans

An improved line of Fiberglas-reinforced pans in several sizes and colors was shown by G. B. Lewis Co., Watertown, Wis. The pans are suitable for handling wet and dry yarn. (A-7)

### Floor Trucks

Floor trucks for handling loads up to 1,500 lbs. were displayed by Orangeville Mfg. Co., Orangeville, Pa. The roller-bearing wheels are rubber tired, slid rubber, pneumatic, or molded. (A-72)

### Yarn and Fabric Boxes

Laminated round-corner boxes for handling yarn and fabrics were shown by Spaulding Fibre Co., Inc., Dover, N. H. The boxes are made of several thicknesses of fibre and hardwood veneer.

No center bands or rivets are used, and the box does not warp or buckle when used under wet conditions. (A-8)

### Conveyor Belts

A complete line of conveyor belts in woven cotton fabrics, multiple fabrics, Teflon, neoprene-covered, asbestos-covered, and plastic-covered, was shown by L. M. Robbins Co., Haddonfield, N. J. The Teflon belt is acid resistant and will not become sticky. (A-9)

### Ribbed Conveyor Belt

A ribbed conveyor belt shown by B. F. Goodrich Products Co., Akron, Ohio, moves packages up or down sloped conveyors without slippage of the packages.

A series of inverted V-shaped ribs or cleats run across the belt, and extra-high ribs are spaced 18 ins. apart. (A-10)

### Label System

A label system for addressing or marking multiple shipments was shown by Weber Marking Systems, Div. of Weber Addressing Machine Co., Inc., Mount Prospect, Ill. A stencil is attached to a printer, and 30 to 40 labels and fill-in information are printed each minute. (A-11)

### Industrial Wheels

Heavy-duty industrial wheels with pneumatic tires in sizes of 6, 8, 10, and 12 ins. were shown by Gleason Corp., Milwaukee, Wis. Hubs for the wheels were also shown. (A-12)

### Magnesium Hand Trucks

Magnesium hand trucks and bin trucks were shown by Brooks & Perkins, Inc., Detroit, Mich. Garment trucks were also shown. The trucks are lightweight and very strong.

A 300-lb.-capacity platform truck weighs only 54 lbs. Wheels range from 4 to 8 ins. in diameter. They have ball bearings, are self-lubricating, and have rubber tires. (A-13)

### Roller Printers

A roller printer to mark packages was exhibited by Algene Marking Equipment Co., Garfield, N. J. It is made of die-cast aluminum and makes several hundred impressions before the ink has to be renewed.

The inker is automatic, and the die returns to its position after each impression. One man can make up to 160 impressions per minute. The quick-drying ink will not smudge. (A-14)

### Extension Conveyor

A portable extension conveyor was exhibited by Spivey Co., Philadelphia, Pa. It changes length easily to provide a continuous flow of light and heavy packages.

The conveyor is easily moved and easily extended to fill any gap in a conveyor system, for shipping, or for any materials-handling need.

Several standard sizes are available, or the conveyor can be designed for your special need. (A-15)

**For more information, circle the A-number on Reader-Service post card.**

### Cover for Loading Dock

A folding loading-dock cover for boxcars and trucks was demonstrated by Frommelt Industries, Dubuque, Iowa. The cover keeps out rain, snow, and drafts and maintains the humidity and temperature in a plant.

The cover is weatherproof fabric, and the frame is sturdy galvanized steel controlled with spring tension. The unit is available in several sizes. (A-16)

### Containers for Storage

Small containers for stock bins or for parts handling were shown by Bathey Mfg. Co., Plymouth, Mich. Several containers can be stacked to make assembly benches or storage units. (A-17)

### Fiberglas Trucks

A line of Fiberglas-reinforced panel boxes and trucks was exhibited by G. B. Lewis Co., Watertown, Wis. The boxes and trucks have metal-tubing framework.

They are made in several colors and feature smooth, rivetless interior surfaces that will not snag yarn or fabrics. (A-18)

### Vacuum Fluid Transfer

A vacuum tank kit to pick up and transfer fluids into standard steel drums or larger tanks was shown by Vac-U-Max Sales Co., Belleville, N. J. A tube fits into small openings of drums or tanks and transfers the fluid fast and safely. (A-19)

### Conveyor Drive

A synchronized conveyor drive was demonstrated by Westinghouse Electric Corp., Pittsburgh, Pa. The drive is basically an adjustable-voltage d.c. drive with either a single or multimotor to drive each conveyor section. When a position regulator is used, many sections run together in synchronism.

Special features are: (1) an adjustable-voltage drive with an 8-to-1 speed range, (2) load sharing between motors on multimotor conveyor sections, (3) automatic or manual control, and (4) protection against motor damage. (A-20)

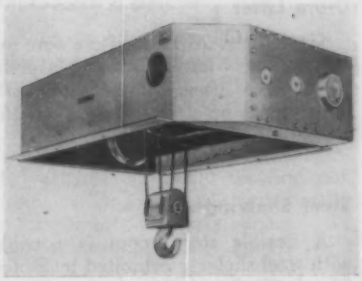
### Fibre Trucks and Cans

An extensive line of fibre containers and trucks was shown by Federal Fibre Corp., Long Island City, N. Y. The line includes drawing cans, drawing cans with swivel rubber casters, closed trucks, open-side trucks, and drop-side trucks. (A-21)

### Oval-Wire Strapper

A portable oval-wire reel with a straightener was displayed by A. J. Gerrard & Co., Melrose Park, Ill. The oval-wire strapping is said to be much cheaper than flat strapping.

The three-stroke machine for strapping oval wire uses wire 0.120 x0.49 in. and 0.120x0.061 in. It weighs only 14 lbs. and fits on the handle of the portable reel. (A-22)



### Low-Head-Room Hoist

A hoist that requires little head room was shown by R. G. LeTourneau, Inc., Longview, Tex. It offers precision control of loads to within 0.008 in. and is available in capacities of 3 to 15 tons. (A-23)

### Packaging Machine

A packaging machine to automatically pack, print, and count packages up to 6 ins. square was demonstrated by Packmasters, Akron, Ohio. It packs 40 packages per minute.

The machine takes heat-sealing paper or transparent film rolls, except polyethylene, and makes packages opaque on both sides or transparent on one or both sides. It requires only 3x4 ft. of floor space. (A-24)

### Air-Power Strapping

An air-power strapping machine, Model AP, demonstrated by Signode Steel Strapping Co., Chicago, Ill., has four important features: it (1) applies the right tension every time; (2) gives predetermined tension up to 1,600 lbs.; (3) tensions, seals, and cuts steel strapping in one smooth, continuous operation; and (4) straps skids, crates, boxes, and bundles.

The tool is used with strapping $\frac{3}{8}$ or $\frac{1}{2}$ in. wide. It weighs 21 lbs. An automatic seal-feed magazine holds 75 seals and is easy to load. (A-25)

**For more information, circle the A-number on Reader-Service post card.**

### Drum Lifter

Single or twin drum lifters were exhibited by Merrill Bros., Maspeth, N. Y. The lifters can be used with either hand or electric hoists. (A-26)

### Steel Shelving

A flexible store room is possible with steel shelving exhibited by Penco Metal Products Div., Alan Wood Steel Co., Philadelphia, Pa. Cabinets can be formed in many variations with standard parts. (A-27)

### Molded Wheels

Molded caster and truck wheels were shown by Continental-Diamond Fibre Div., Budd Co., Inc., Newark, Del. They have high-impact strength and take hard shocks without chipping or breaking.

The wheels will not cut floors and do not leave black marks. They also reduce floor chatter.

Since the wheels are nonmetallic and noncorroding, they can be used where weak-base acids, salt solutions, and organic solvents are present. (A-28)

### Package Conveyors

Several types of package conveyors were shown by A. B. Farquhar Div., Oliver Corp., York, Pa. Two models shown were slider-bed and roller-bed conveyors. (A-29)

### All-Steel Skids

All-steel all-purpose skids were displayed by Weldon Industries, Watertown, N. Y. The skids are adjustable both in length and width. (A-30)

### Wire Storage Containers

Wire storage containers in several sizes that hold from 2,000 to 4,000 lbs. were exhibited by Springport Steel Products Co., Springport, Mich. When the containers are not being used, they can be folded to one-fifth normal size.

The containers have four sturdy legs of malleable castings or fabricated steel so that they can be moved with lifts trucks. Optional features are hook eyes for crane lifting, divided sides or ends, and caster plates and casters. (A-31)

### Rubber-Tired Wheel

A rubber-tired wheel that starts with a minimum of effort, swivels easily, absorbs shock, protects floors, and runs quietly was exhibited by Roll-Rite Corp., Oakland, Calif. (A-32)

### Safety Hand Truck

A hand truck to move water fountains, transformers, and other appliances that must be handled carefully was featured by Stevens Appliance Truck Co., Augusta, Ga. The truck has a safety strap held tight by a ratchet. (A-33)

### Lightweight Steel Pallets

Lightweight welded-steel pallets in many designs were exhibited by Econoweld Corp., Dayton, Ohio. Most pallets have skids with four-way entry. (A-34)

### Continuous Coder

Continuous marking of fabric selvages is possible with a printing coder exhibited by Algene Marking Equipment Co., Garfield, N. J.

A vertical slide bar adjusts the coder automatically to the changing diameter of a roll of fabric. A set hole in the bar suspends the coder while exhausted rolls of cloth are replaced.

The marking area is ¾x12 ins., and interchangeable rubber type is available in kits of individual letters and numbers or logotype strips. (A-35)

### Trailer Truck

A trailer truck that couples and uncouples automatically was exhibited by Howe Scale Co., Rutland, Vt. It couples easily at angles up to 60° and does not whip or cut in on sharp turns. (A-36)

### Horizontal Belt Conveyor

Streamlined horizontal belt conveyors in steel, aluminum, and stainless-steel construction were demonstrated by New London Engineering Co., New London, Wis. The conveyors have belts from 2 to 18 ins. wide, and over-all conveyor length is from 9 to 80 ft. (A-37)

### Light-Duty Caster

A lightweight light-duty caster with a pneumatic tire was shown by Faultless Caster Corp., Evansville, Ind. It has neoprene seals for retaining lubricant and for excluding dust and dirt.

The wheels are available in diameters of 4, 5, and 6 ins.; and each wheel has a capacity of 65 to 125 lbs., depending on its size. (A-38)

**For more information, circle the A-number on Reader-Service post card.**

### Timing-Belt Drive

A positive nonslip timing-belt drive with a tooth-and-groove design was introduced by United States Rubber Co., New York, N. Y. The drive is efficient from slow to very fast speeds.

The drive has strength without stretch because it is made with helically wound steel cable. Application is easy, and no adjusting and lubricating are necessary. Speed ratios are 12 to 1. **(A-39)**

### Movable Shelving

Movable shelving that can be fastened and removed with your thumb and forefinger was exhibited in an electromatic storage bin by Standard Pressed Steel Co., Jenkintown, Pa. After a shelf is positioned on supports, four pivoted locks are swung into place to engage the lower flange of the shelf to lock it securely. **(A-40)**

### Special Bolts and Washers

A complete line of special bolts, washers, machine-screw nuts, expansion shields, studs, and setscrews was shown by Sterling Bolt Co., Chicago, Ill. **(A-41)**

### 16- and 18-In. Roving Cans

Vulcanized Fibre roving cans of 16- and 18-in. dia. were shown by Continental-Diamond Fibre Div., Budd Co., Inc., Newark, Del. The cans have either metal tops, rolled fibre tops, or swedged tops.

The cans are said to eliminate static in synthetics sliver. The inside is smooth to prevent snags. The material is dense and tough and springs back under hard knocks. It does not crack, chip, or break. **(A-42)**

### Storage and Pallet Racks

Storage racks that can be erected at low cost by unskilled labor were exhibited by Allen Iron & Steel Co., Norristown, Pa. With the system, there is flexibility of arrangement with standard parts. **(A-43)**

### Floating-Bottom Trucks

Floating-bottom trucks and boxes were exhibited by Spaulding Fibre Co., Inc., Dover, N. H. They are made for cotton yarn on bobbins.

The floating bottom is fully depressed by a load, and it rises as the truck is unloaded to keep bobbins within easy reach of an operator. The bottom is easily removed for cleaning. **(A-44)**

### Pneumatic Stretcher

An air-powered model PNE stretcher demonstrated by Brainard Steel Div., Sharon Steel Corp., Warren, Ohio, tensions metal strapping. It provides unlimited take-up at predetermined tensions; the degree of tension is controlled by air pressure.

Therefore operator fatigue is reduced, and errors in tensioning on ordinary stretching operations are lessened considerably. A model is available for straps in the following widths: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{3}{4}$ in. Each tool is adjustable to the gauge of strapping it handles. **(A-45)**

### Pallet-Type Steel Boxes

Pallet-type steel boxes for handling, storage, and shipping were shown by Hamlin Metal Products Co., Akron, Ohio. You can set up or fold a box flat in less than 20 secs.

The boxes are made of durable, lightweight, alloy steel. An average-size box weighs only 180 lbs. in comparison with 220 lbs. or more for older boxes. **(A-46)**

### Photoelectric Relays

Photoelectric relays for many applications were shown by Westinghouse Electric Corp., Motor & Control Div., Buffalo, N. Y.

The relays and related equipment are used to sort packages by size, operate switches on textile shearing machines, stop looms at yarn breaks, count objects, operate doors, and many other operations. **(A-47)**

CONTINUED ON PAGE 178

## Machines From Plant-Maintenance Show

Four machines were shown that were also shown at the Eighth Annual Plant-Maintenance show [TEXTILE WORLD, April, '57, p. 110].

### Power Sweeper

A large-capacity power sweeper that dumps hydraulically was introduced by G. H. Tennant Co., Minneapolis, Minn. The sweeper has a 42-in. main brush and a 12-in. side brush and cleans a 54-in. path. The sweeping capacity is 110,000 sq. ft. per hr. in open areas. At a touch of a lever by the operator, loads up to 800 lbs. are dumped hydraulically in about 8 secs. **(A-48)**

### Movable Wall

A wall to partition textile production areas for isolating lint and humidity was shown by Bemis Bro. Bag Co., Minneapolis, Minn. The wall protects different fibers in production from lint, other fibers, and excessive humidity. **(A-49)**

### Fire-Door Control

An electric fire-door control was demonstrated by Clark Door Co., Newark, N. J. The door closes automatically when flash fires occur. **(A-50)**

### Plastic Caster

An all-plastic nylon-reinforced industrial wheel was shown by The Fairbanks Co., New York, N. Y. The wheel has thread guards to keep out waste lint and thread. **(A-51)**

**For more information, circle the A-number on Reader-Service post card.**

# Twist Setting Improves NYLON CARPET YARNS

**New techniques of treating nylon carpet yarns to give wider texture ranges and to keep yarn from untwisting during wear and cleaning include—**

- **Planning the yarn construction**
- **Relaxing the yarn**
- **Twist setting with boiling water**
- **Twist setting with pressure steam**

A TWIST-SETTING PROCESS DEVELOPED BY DU PONT for nylon carpet yarns makes possible many of the textures and designs so popular in today's carpets. The twist-setting operation, done during yarn manufacture, also keeps these yarns from untwisting even under extreme conditions of wear and cleaning.

Type-100 carpet nylon is usually the choice for yarns that are to be twist-set. This carpet nylon is not crimp-set, which means that it has not been exposed to a heat-conditioning operation during manufacture.

Some types of staple and tow are heat-set during manufacture to insure good crimp retention during subsequent processing. These types of nylon are not considered satisfactory in 100% form in yarns that are to be twist-set, because a set already has been established. Type-100 noncrimp-set carpet nylon has not been exposed to heat during manufacture and may be given a permanent set by the carpet-yarn processor.

Any conventional yarn system may be used to make these new yarns. The staple most used on the cotton and woolen systems is 15-den. 3-in. Type-100 nylon staple.

Worsted spinning requires 15-den. 4½-in. or 6½-in. Type-100 nylon staple. With the American system, 15-den. Type-100 nylon tow is used. Flax spinning calls for 15-den. 6½-in. or longer Type-100 staple.

### Plan Yarn Size and Twist

In planning yarn construction, the yarn size, ply, singles twist, and ply twist are all governed by the desired texture or surface effect. A cut-pile carpet with a straight rod-like pile, described as a nubby texture, is made with a balanced-twist yarn.

The amount of twist depends on the desired firmness in the finished yarn. Low twists give softer, fuller yarns than are obtained with high twists. Here are the yarn-construction details for nubby textures:

Yarn size (cotton system)—2.5 to 4s, 2 or 3 ply
Singles twist—3.5 to 8.5 tpi., Z
Ply twist—3 to 8 tpi., S

Kinky or frieze types of yarns are made with an unbalanced twist, and cut-pile carpets of these yarns show a random mixture of visible yarn ends and sides to a two-shade appearance. Such yarns are usually of the same size and ply, but they are given different twists.

Here are the construction details of frieze-type yarns:

Yarn size (cotton system)—2.5 to 4s, 2 or 3 ply
Singles twist—2.5 to 4 tpi., Z
Ply twist—5 to 8 tpi, S

The twist selection is a matter of desired effect.

By blending varying amounts of noncrimp-set Type-100 carpet nylon with crimp-set Type-101 carpet nylon and twist setting the resultant yarns, a variety of textures is possible. Such yarns have good twist retention, but they lack the distinct set associated with yarns of 100% noncrimp-set fibers. Still other textures are obtained by twisting singles yarns of Type-100 and Type-101 carpet nylon.

### Relax Yarn on Skeins

Skeins are used to twist-set frieze-type yarns to allow maximum kinking and relaxation. Skeins or spring packages may be used with nubby yarns. Yarns set on spring packages are leaner and harder than yarns set on skeins.

The time the yarn remains on twister bobbins before skeining affects the yarn contraction during subsequent processing. When yarns that have been on twister bobbins for varying periods of time are skeined, the nonuniformity of contraction produces skeins of different lengths. This nonuniform contraction causes texture streaks in the finished carpet.

Because it is not always possible to control lag times, a method of uniformly relaxing the skeins before twist setting is necessary. This method is done with wash wheels, tumble dryers, or any available equipment designed to mechanically flex the skeins with a tumbling action.

Skeins are usually tumbled dry without heat. The time necessary to get complete relaxation depends on the yarn, size of the load, and type of equipment; but the time seldom exceeds 5 mins. The speed of the tumbler should be sufficient to carry the skeins to the top of the tumbling cylinder and have them drop from that point.

You should experiment to determine the best skein leasing and tying methods for specific yarns or relaxation cycles. Find a compromise between (1) tying too tightly, which will restrict the degree of relaxation, and (2) tying too loosely, which will cause tangling.

### How To Twist-Set Yarns

Yarns of Du Pont carpet nylon can be twist-set in various types of equipment. The yarn must have the desired texture and twist before twist setting because no alteration is possible once it is set. The yarn must not be subjected to tensions or extremes of compression during twist setting, which will cause the yarn to take on an undesirable physical set.

Temperature is important in twist setting. Higher temperatures will give better twist retention and deeper dyeing. Nonuniform heat penetration results in both texture and dye differences.

Yarns are twist-set with boiling water in stock-dyeing kettles, bleaching tanks, or other pieces of equipment capable of holding the water at the desired temperature for 30 mins. or longer. This method of twist setting will cause a slight loss in twist

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*Based on data from Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., Nylon Technical Service Section.*

definition because of the fulling action of the water.

The method is not recommended for yarns made from stock-dyed fibers because the fibers have been heat-set at temperatures approaching that of boiling water.

The same equipment can be used for simultaneously dyeing and twist setting yarn.

Twist setting the yarn in water under pressure at temperatures above 212° F. results in a much better set than can be obtained with boiling water at atmospheric pressures. However, when water is the twist-setting medium, there is a slight loss in twist definition. All twist-setting methods involving the use of hot water naturally require drying equipment.

Twist setting stock-dyed staple yarns is possible by this method with temperatures of 230° F. or higher.

**Pressure Steam Is Good Method**

The method of twist setting that gives the most clearly defined twist is pressure steam setting. Any equipment capable of being evacuated and of enough strength to withstand high-pressure steam can be used.

Be sure that all portions of the yarn load reach the desired temperature. In twist setting with pressure steam, uniform penetration of heat is assured with a carefully controlled sequence of vacuum and steaming periods.

This technique has given complete and uniform penetration with an adequate margin for safety. Here's a procedure that can be used for twist setting on the Turbo Fiber Setter with a 50- to 60-lb. load:

1. Vacuum (28 ins. mercury)—5 mins.
2. Steam (28 psi.-ga.)—4 mins.
3. Return to atmospheric—½ to 1 min.
4. Steam (28 psi.-ga.)—4 mins.
5. Return to atmospheric—½ to 1 min.
6. Steam (28 psi.-ga.)—4 mins.
7. Vacuum (28 ins. mercury)—6 mins.

The purpose of the initial vacuum is to rid the vessel and yarn of all air to facilitate the penetration of steam. If air is present in the vessel, the penetration of heat into the innermost layers of yarn is impaired. The presence of air during heating also causes the yarn to yellow.

The first steam should be introduced immediately after the initial vacuum to prevent air from re-entering the vessel. The three steaming periods assure uniform twist-setting temperatures throughout the load. The return to atmospheric pressure between steamings purges the spent

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PACKING STATIONS alongside the finishers have reduced damage to wool tops. Conveyors to the packing tables have improved production.

# *New Machine Layout Improves* WOOL-TOP PACKAGING

**• By installing the finishers near the packaging section, this British mill reduced damage to wool tops. Conveyors have also helped to speed production and reduce packers' waiting time.**

DAMAGE TO WOOL TOP WAS ONE OF THE PROBLEMS solved at Robert Jowitt & Sons Ltd., Bradford, England, with a rearrangement of finishing machines. The new layout of machines has also increased efficiency in the wrapping and packing department.

Before the change, the balls of wool top were weighed by the finisher operators as the balls were taken from the machines and dropped down chutes into bins in the packing and wrapping department below. The balls were then picked up, carried to the tables to be wrapped, and pushed on the floor ready for packing into bags for shipping.

This system was unsatisfactory because the packages were handled and dropped too much. Girls who wrapped the tops sometimes had to wait 15 mins. for enough tops to collect in the bins.

The finishers were installed on the ground floor where the packers and wrappers work. There are 10 finishers, and they are attended by three operators. Three conveyors are arranged opposite the machines near the balling heads.

The finisher operators now take the ball of top off the machine, weigh it, and place it on the nearest conveyor. Each conveyor feeds a wrapping table. A photoelectric cell controls each conveyor and stops the conveyor when a ball of top arrives at the table.

After the tops are wrapped in paper, they are passed through an opening in the wall to the packing room. Four men in this room pack the tops into bags and load them in trucks to be shipped.

*From Target, Central Office of Information*

SHEET MANUFACTURING starts with cutting the double-doubled fabric into suitable lengths. Care in keeping filling straight makes cutting possible. Other sheets for special orders are torn.

STITCHING SHEETS occupies 32 workers, supplied by racks carrying 10 doz. sheets. The operator does not remove the sheet but picks up the edge and hems each end.

# SHEETS and PILLOWCASES At Indian Head Mills

**The fabricating operation at Indian Head Mill's Whitney, S. C., plant produces 5,000 doz. sheets and pillowcases a week. Efficiency of the operation depends on—**

- **Good layout of work areas**
- **Blending mechanization and manual labor to the best advantage of both**

When Indian Head Mills moved its Northern operation to South Carolina, it had an opportunity to lay out the fabricating operation to combine the best from the old plant with the newer developments that had come along.

TWO LINES of sheets are handled on this conveyor, where assembly-line methods are used to complete the operation. Under the hood is a flat-head press that descends automatically and presses the sheets dampened by the spray (arrow).

Many years of experience had taught that mechanization of sewing, inspecting, folding, pressing, labeling, and packaging—the principal elements in fabrication—could be carried about so far; and then manual labor had to take over.

Unlike handling daily a million packages of cornflakes or something that can be weighed, closed, and wrapped by special machines, the soft and slightly variable units represented by sheets and pillowcases still resist complete mechanization, particularly in packaging.

### Careful Layout Necessary

To eliminate unnecessary motion on the part of the operator, Indian Head has arranged sewing stations and developed auxiliary equipment so that the operator of a sewing machine, a pillowcase turner, a folder, or a packager has everything within reach and need not be concerned with supply or removal of goods.

Work places are serviced by hourly paid employees who keep the various piecework operations supplied with fabric to work on and remove the partially finished units to the next operation. Conveyors are used to transport sheets and pillowcases through the final operations of folding, pressing, labeling, and packing into shipping containers.

Completely mechanical folding of pillowcases is done on two modified Sjöström machines. Sheets are folded by

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FITTED SHEETS are laid out by hand; then the corners are cut out over a standard pattern. Hand-made lay is preferred to get straight edges.

HOOKING OFF pillowcases is done on a hooker that is adjusted to throw a double pillowcase length. The operator cuts each lay with a power knife exactly in the middle of the lay.

MAKING PILLOWCASES is a piecework job that requires concentration and dexterity. Operators sew the side seam and hem the end. Production averages 5,000 doz. pillowcases per week.

TURNING PILLOWCASES requires two operators. The operator's hand hits a switch at the bottom of a loading motion that actuates the arm, which is stripped by the conveyor feed rolls.

FOLDING MACHINES fold pillowcases into thirds, doubles them, and delivers them to a conveyor that takes them through a press. The press delivers the cases to the final-packaging conveyor.

BAGGING in printed polyethylene bags completes the pillowcase operation except for packing in cartons. The conveyor takes bagged cases to the shipping area.

# *Joanna Mills Reports on —*
# METALLIC CARD CLOTHING

- **Hundreds of tests on metallic card clothing have been made at Joanna Mills Co., Joanna, S. C. The mill now has 78% of its cards equipped with this type of clothing.**
- **Here's what the mill has learned about it—**

**By J. L. DELANEY,** General Superintendent, Joanna Mills Co.

SEVERAL YEARS AGO, WE DECIDED TO TRY METALLIC CARD CLOTHING at Joanna. Some of the earlier trials in other mills were made on a single card and offered little in the evaluation of such an important project. For this reason, we installed 10 cards of metallic clothing on which to base our research. The results were satisfactory, and today 78% of our cards have metallic clothing.

The early installations at Joanna were tedious and time-consuming. Our management as a whole did not look too favorably on the method of installation used by the early fitters.

Too many old-fashioned line-shaft-driven devices of uncertain stability were used. There was too much splicing of the wire with flame-heated soldering irons. There was too much time lost while the old-style bare-cylinder grinding wheel made its interminable trips across the cylinder and the doffer.

### Carding Efficiency Goes up

But in spite of these objections, we put on our trial sets, checked them out, and found that we were doing a superior carding job with the new metallic card clothing. The web was smoother and there was a definite reduction in neps. Surprisingly, there seemed to be a marked increase in the efficiency of the card. The waste taken out by the flat strip was darker and had fewer long fibers.

For later installations, we used a new type of high-precision installation equipment. This equipment includes high-speed grinders, one each for the cylinder and the doffer. Dial micrometers are fitted on each end of the grinders to measure accurately the amount of stock that is taken off at each traverse.

A remote-control card drive permits one man to make the actual installation. Extra help to lift the rolls is supplied by casual assistance from the card tender or grinder.

Top wire is supplied in one continuous length, which is highly essential, but the base wire cannot be so delivered because it is too heavy. Splicing is necessary; and to expedite this chore, a quick-action welding device is used that leaves the cards free from rust stains and discoloration caused by soldering acids.

### Doffer Journals Are Rebuilt

Shortly after our initial installations were under way, we discovered that most of our doffer journals were badly worn. With regular fillet clothing, the settings aren't too tight and there is a certain amount of give in the flexible wire. But the metallic clothing is set to 0.005 in. between the doffer and cylinder, and there is absolutely no give to this clothing.

We then started a program to replace the journals as we reclothed each card. This plan proved to be too expensive, since journals cost about $48. The cheeks of the card, which contain built-in bearings, run about $50 per side.

We were told that cast-iron journals would not work because welding causes excessive distortion. So we used a new kind of metal-spraying machine to rebuild the journals, and it did the job very well. We did weld 15 or 20 journals, however, without a single instance of distortion. These journals are still running after five years.

### Cheeks Are Reused

Our problem for reusing the card cheeks was solved by the shop supervisor, who suggested planing off $\frac{1}{8}$ in. from the joining surface of the lower bearing and clamping the top and bottom bearing together. Then the bearing was reamed to standard size. We have been using this method now for about five years without any difficulties.

There are two more things that we worked out to make the job easier:

The first is a winch, operated by one man, that lifts the doffer out of the card. With two men, or with four, this operation is very unsafe because of the close quarters between adjoining cards and the heavy weight of the doffer. The winch, mounted on a ball-bearing-castered frame, has plenty of power to handle heavy loads.

The other problems was to remove the doffer journal without driving it out with hammers. The shop supervisor came up with a rig that uses a 20-ton jack and permits one man to take out the old journal and put in a new one in less than 30 mins.

*From a paper presented at the 1957 Cotton Research Clinic, Savannah, Ga.*

## Joanna Answers Many Questions About Metallic Clothing

We have been asked many questions about our experience with metallic card clothing. Here are some of the questions and our answers, based on Joanna experience:

**Does it take much longer to install metallic clothing than regular clothing?**

It takes approximately 30 hrs. for a trained man to properly install the metallic clothing. The time for installation of regular clothing may vary from 6 to 20 hrs. However, two men are usually required to install regular fillet, while only one man is needed for metallic wire. A certain amount of additional help usually is provided by the grinders for either kind of installation.

**Can the ordinary card grinder install metallic card clothing?**

No. Metallic clothing can be installed only by a manufacturer's representative who is equipped with special installation equipment. A local man who has good intelligence and some mechanical ability may be trained by the manufacturer to install the clothing. This training period may take anywhere from two to four weeks, depending upon local conditions.

### Initial Cost Is High

**How much more does metallic clothing cost than regular clothing?**

The material cost is almost twice as high for the metallic as it is for the regular flexible fillet clothing. This cost includes the price of the base wire, which is installed only one time. If it becomes necessary to reclothe the card, the original base wire is still there; and its cost will not be included in any further reclothing.

**How long will metallic clothing last compared with regular clothing?**

The normal life of regular clothing is from 5 to 10 years. Its life is controlled by the frequency of grindings, the degree of grinding, the hours per week of operation, and whether or not three full shifts run six days a week.

With metallic clothing, there is no grinding and no loss in the height of the wire. Some manufacturers claim that the actual wear on the tooth does not occur at the tip but takes place at a point about one-fourth down the front of the tooth. For this reason, the manufacturers say that the tip of the tooth actually grows sharper with use.

**Isn't it true that a small smash on regular clothing can be scratched up, whereas such a smash on metallic clothing must be cut out and replaced?**

Yes, smashes will necessitate replacement. The entire fillet isn't taken off; only the damaged circumference is cut out and replaced.

**Approximately how much per year per card does it cost to operate regular clothing as compared with metallic clothing?**

The normal life of regular clothing is approximately one-fourth the normal life of metallic clothing. This figure is debatable; but based on this premise, we have arrived at a figure of about $22.50 per year for the metallic against $47 per year for the regular. These figures are based entirely on the actual cost of the different clothings and do not include any other factors.

**How often is grinding required for metallic clothing?**

Grinding is required only at installation and at any later date when a major repair has been made.

### Close Settings Are Used

**Can metallic clothing be set as closely as regular clothing?**

Yes, metallic clothing can be set even closer. For regular clothing, the card grinder develops a feel for his setting. He may use what he calls a tight or a loose setting. Settings for metallic clothing are made the same way the valves on your automobile are set—"go or no go." As a general rule, metallic-clothed cards are set much closer than fillet-clothed cards because of the rigidity of the wire.

**How frequently do smashes that require reclothing the card occur in metallic clothing?**

Our experience has been about three cards per year. Most of these repairs were made to the doffers; the trouble was caused by water getting on the doffer and causing a build-up of stock.

**Are close settings dangerous?**

Yes. A fillet-clothed card has a certain amount of give because the wire is flexible. Metallic clothing has no give at all. For this reason, lumps and hard ends and folded laps must be kept out of the card. The web must not be allowed to run around the doffer and build up because the closer settings will permit a smash much sooner than regular settings.

### No Answer to Flaking

**How about flaking or ragged selvages on metallic clothing?**

This difficulty occurs with regular clothing as well as metallic. We think the answer lies in better-fitted screens, screens made concentric with the cylinder, or possibly screens of a different type. Up to now, we have no answer to the question.

**What about the use of continuous strippers on cards equipped with metallic clothing?**

The strippers would be entirely useless and wasteful. With metallic wire, there is only a minute amount of lint in the wire at any time. Foreign matter, such as impacted wood, seed hulls, and belt dressing, can be removed only by the mechanical action of a wire brush.

### Spinnable Fibers Are Left

**Does metallic clothing take out less waste than regular clothing?**

Yes, the metallic clothing is more selective in getting out the waste and it leaves more spinnable fibers. Strips will be lowered at least one full grade and will contain less lint and more trash. There also will be less lint in the fly.

**If less waste is taken out by metallic clothing than by regular clothing, isn't this stock coming out in a later process as clearer waste?**

We have no direct answer to this question. We think that we are not taking out less waste at the card but are taking out less spinnable fiber.

**Isn't it true that the web from the metallic wire doffer has a tendency to fall off and end up under the card as waste?**

This condition was true on our earlier installations. During the latter part of 1955, however, a different type of doffer wire was brought out that completely overcame the trouble.

**What is the difference between the old and the new type of doffer wire?**

The new wire has fewer teeth per inch and a sharper angle to the teeth. Where the old wire had 14 teeth per inch and 80° teeth, the new wire has 10 teeth per inch and 50° teeth. For some of our tests, we went as low as six teeth per inch with very good results in the web, waste, and finished yarn.

**Were there any other good effects from the new doffer wire?**

Yes. Much to our surprise, we found a drastic reduction in spinnable fiber in the card strips. We think the new wire is more efficient in picking up the stock from the cylinder. The wire seems to get the lint off the cylinder the first trip around, which prevents the card from grinding up the fibers into waste.

**What about the new type of wire used on the cylinder?**

Coarse wire with high-angle teeth will not card on the cylinder. The stock transfers poorly from the cylinder to the doffer.

### Long-Staple Cotton Is Carded

**Metallic wire may be satisfactory for coarse goods, but what about long-staple cotton for fine numbers?**

We are running metallic clothing on at least three different mixes. One is a fairly low-grade mix used in yarns from 6s to 18s and carded at about 15 lbs. per hr. The second mix is our standard shade-cloth mix of Strict Middling 1⅛-in. cotton, which is carded at 8 lbs. per hr. and spun into 30s and 40s. The third mix is 1⅛-in. Egyptian Karnak that is carded at 4½ lbs. per hr. The Karnak is spun into 60s and 80s yarn.

On a straight comparative test, our metallic cards on all three of these mixes produced a web with fewer neps. The yarn usually was stronger and had fewer imperfections per 50 yds. The last finding was verified by at least two outside agencies.

**How fast is it possible to card on metallic clothing?**

There is no direct answer to this question. What we learned is that when the two types of clothing are run in competition at any speed, the metallic clothing always gives the best quality of sliver and amount of waste.

### Waste Cards Can Be Clothed

**Would metallic clothing be economically practical on waste cards?**

We think metallic clothing will work well no matter where it is used. While we do run a substantial amount of waste, we prefer to use a special waste-type flexible fillet. We feel that eventually we shall use metallic wire on waste cards, but at present we are more interested in getting our production cards changed over.

**Does wetting the card affect the metallic clothing as bad as it does regular clothing?**

No. With regular clothing, the cloth foundation becomes wet and in time the wire in the base will rust, break, and fall out. Since there is no fabric base to metallic clothing, there is nothing that ordinary drying-out procedures will not quickly overcome. You can put the card back into production quicker and with no lasting threats to its life.

### What Becomes of the Card Grinder

**Will metallic clothing abolish the job of card grinder?**

No. The card grinder will remain as the card setter. It is essential that the card be set properly to perform its task. No matter what clothing may be on the card, there are flats, screens, lickerins and other parts to be set regularly.

**What combination of the new-type wire teeth gives the best results?**

Our experience has led us to standardize on 80° teeth with 20 points per inch for the cylinder and 50° teeth with 10 points per inch for the doffer.

The finer wire on the cylinder does not hold as much trash as the longer and heavier tooth. The wire also produces fewer neps, a smoother web, and less lint in the waste. Further, there is a nice drop in the number of imperfections in the finished yarn.

The higher-angle, coarser tooth on the doffer gives us a surface that holds the web tightly; yet the tooth freely releases the fleece at the comb. Because of the finer cylinder wire, there is less impacted waste on the doffer surface.

### Falling Webs Are Stopped

**Is it possible to run a metallic-clothed cylinder with a regular-clothed doffer?**

Yes, this was done on some of our earlier installations. Our purpose was to keep the web from falling off the doffer while we were carding. Our only recourse was to grind the card very lightly. This would rough up the tips of the wire and cause better web adhesion.

To avoid this difficulty—before the remedy was found in coarser doffer wire with more angle—regular fillet wire was tried and it proved effective. We decided to replace the fillet, however, in order to have all cards uniformly equipped and set. We also wanted to cut out grinding and minimize stripping.

**What has been the experience at Joanna with semimetallic flexible wire that has a specially treated base and tip?**

We have tried several different kinds of flexible semimetallic wire. The wire is much harder and it will stand up longer between grindings. We grind it three or four times a year, compared with three or four times a month for regular wire. The cards are stripped less often, about every 40 hrs. Where metallic clothing cut neps about 25%, this clothing cut neps about 15%.

The improved clothing cannot be scratched up for repair. While the wire resists bung-ups, it does not have any give and we lost several of the trial sets because of bung-ups.

**What has been your experience at Joanna with different-type flat wires?**

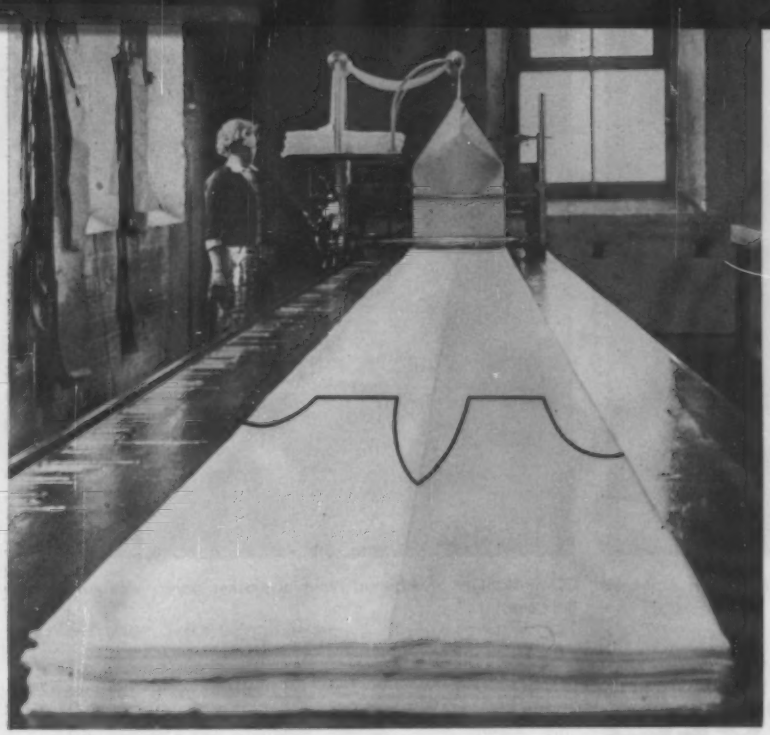
Up to now we have tried several different kinds of flats covered with hardened wire. The wire is similar to the clothing used on cylinders and doffers.

Some grinding must be done on these flats, but not as frequently as on the standard flats. We found that there is a definite reduction in flat strips and no increase of neps in the web. Up to now, we have not completed yarn or cloth tests.

**In a general way, just what do you expect to gain from the use of metallic clothing?**

To summarize, we have gained so far a definite and positive nep reduction in our web, yarns, and fabrics. We also are saving a lot of spinnable fibers at the card, which with regular clothing would have been taken out in the flat strips. We are minimizing stripping with its attendant savings; and we have eliminated grinding, which is wasteful, unproductive, and time-consuming. Barring bad accidents, the clothing will last out the life of the card.

One disadavantage of metallic clothing is its weight, which is about 500 lbs. per card. No mill should install this clothing without having engineers check the structural strength of the building.



LAYING-UP DEVICE allows fabric to be automatically turned as it is laid up on the cutting table so that the crease marks are down the center of the cloth. Undershirts are then marked on the fabric so that they can be cut out with a band knife. After turning, the creases are on the side of the garment.

# British Mill Solves
# FABRIC LAYING-UP Problem

**Problem**—Turning knitted fabrics on the cutting table so that crease marks made by the calender are cut out

**Solution**—An attachment on a laying-up machine that folds the cloth automatically and saves up to 40% time

WHEN A TUBULAR KNITTED FABRIC comes from the calendering machine, there is a crease mark down either side of the cloth. To cut certain garments without the crease marks appearing down the center of the garment, the crease marks must be turned so that they run down the center of the cloth.

Towles and Co. Ltd., Loughboro, England, uses an attachment on its laying-up machine that automatically turns the creases to the center of the fabric. The device, invented at the mill, is patented and now built by Philips & Sons Ltd.

Towles knits cotton interlock fabric to make into underwear. The fabric was formerly turned by hand to eliminate the crease mark from the center of the garments. With the new device, the mill has reduced the time taken to lay up and cut 20 doz. undershirts from 2 hrs. 55 mins. to 1 hr. 37 mins.

There are two ways of cutting undershirts from tubular fabric. With the first method, the armholes are cut out from the edges of the fabric and the neck is cut out from the center. However, the neckline is cut lower at the front than at the back; so the neck must be cut in two stages.

The complete back and part of the front neckline are cut out together, and individual garments are folded by hand so that a deeper cut can be made for the front neckline. This job must be done by hand scissors and is slow and expensive.

The second method is to cut the armholes from the center of the piece and the front and back of the neck from opposite sides. This method, however, leaves the crease down the center of the garment when conventional laying-up machines are used.

The device sits on one side of the laying-up machine. The fabric is laid at right angles to the length of the table and fed over two rolls.

The last roll is positioned directly over a spreader that rests on the delivery rolls of the laying-up machine. The fabric is pulled down over the spreader, and the spreader delivers the center of the cloth to the edges of the lay.

Made from light alloy, the device is easily removed from the laying-up machine when goods are cut that do not have to be turned. The laying-up machine operator usually does the changing over. About 5 mins. time is used to change the machine over from one laying-up method to the other.

SLASHING DISCUSSION was led by Charles Moody of Alabama City.

COMPARISON of different types of slasher dryers was made by Bob Lee.

# SLASHER ROLLS
## Are Discussed by Alabama TOE

**The Alabama Textile Operating Executives held their spring meeting at Thach Auditorium, Alabama Polytechnic Institute, Auburn, Ala. Among slashing subjects discussed were—**

- **Hot-air, cylinder, and can drying**
- **Slasher squeeze rolls**
- **Pneumatic presser rolls**

### 1. Slasher Drying—

The first question was about the comparative merits and disadvantages of the different types of slasher drying. Most of the mills reported that they had no basis for comparison but gave some operating data.

**Mile A**—"We size 144.29 oz. per min. on a four-cylinder slasher. It has three 7-ft. cylinders and one 5-ft. cylinder. An average of 10.4% size is added to the warp. We have one operator per slasher and one helper per four slashers.

"Our warp yarn varies from 6.9s to 13.6s with from 1,944 to 2,687 ends per warp. The temperature of the cylinders is kept at 220 to 240° F."

**Mill B**—"We size 35 yds. per min. on three-cylinder slashers; two 7-ft. cylinders and one 5-ft. cylinder. Size added is 12% on blue denim warps composed of 2,044 ends of 9.6s yarn. We have one operator per slasher.

"Temperature of the cylinders is maintained at 238° F. with 11 lbs. of steam. Cost is $0.0021 per yd.

**Mill C**—"We size approximately 136 oz. per min. on a three-cylinder slasher and about 240 oz. per min. on a hot-air slasher. Size added is about 10% on 8s to 23s yarn, 1,200 to 2,000 ends per set.

"We maintain temperatures of 130 to 140° F. and have one operator per slasher."

**Mill D**—"We size 75 to 125 yds. per min. and add 9 to 14% size, depending on yarn number and ends per set. The yarn numbers range from 12s to 30s, and ends per set from 1,950 to 6,744.

"We have one nine-can slasher and two three-cylinder slashers. We maintain 30 lbs. of steam pressure and 270° F. temperature in the nine-can slasher and 12 lbs. of steam pressure and 240° F. temperature in the three-cylinder slashers. There is one operator per slasher."

**Mill F**—"We size 196 oz. per min. on a three-cylinder slasher. Size added to 8.75s yarn, 2,000 to 8,500 ends per set, is 10 to 11%. We maintain cylinder temperature of 240° F. and have one operator per slasher."

**Mill G**—"Our slashers are the old two-cylinder type except for one new hot-air slasher and one four-cylinder slasher. The old-style slashers size about 100 oz. per min. and the others about 300 oz. per min. For terry top warps, we add about 3 to 3½% size. For flat goods, about 11 to 12% size is added.

"We have two operators and one helper on three of the old slashers. The new slashers have an operator and helper on each slasher. Our sets have from 1,000 to 5,800 ends of 8s to 20s yarn."

**Mill I**—"Our slashers have two 7-ft. cylinders, two 5-ft. cylinders, and two 30-in. drying cans. We run 14 lbs. of steam in the cylinders and up to 30 lbs. of steam in the drying cans.

"Our average run is one warp containing 3,252 ends and one warp of 844 ends of 14.7s yarn. Size pickup is

11½%. Output is 332.4 oz. per min. on the double-front slashers. We have one operator per slasher."

**Mill K**—"Our slashers have two 7-ft. cylinders and one 5-ft. cylinder. They size 170 to 180 oz. per min. Size added is 8%, 12%, or 14%, depending on the customer's specifications and the kind of yarn.

"Yarn numbers are 3.5s to 21s, and there are 800 to 6,500 ends per set. The temperature of the cylinders is approximately 242° F. There are one operator per slasher and four back men for nine slashers."

**Mill L**—"On single-lease warps, our production is 67 oz. per min.; and on double-lease, it is 110 oz. per min. Size pickup varies from 3.25 to 12%.

"Our yarn numbers vary from 10s to 20s and ends per set from 308 to 2,200. Temperature of the three cylinders varies from 212 to 250° F."

### Supply Cost Low for Hot-Air Type

**Mill H**—"We use hot-air slashers altogether. Production is 219 oz. per min. at standard speed of 50 yds. per min. About 14% size is added to the warp yarn. A standard set contains 7,812 ends of 31s yarn.

"We run 80 lbs. steam pressure and have an operator and helper for each slasher."

**Mill O**—"We have seven four-cylinder slashers and one hot-air slasher. Production is 240 oz. per min. Size pickup is 11.75%. Yarn numbers are 9.5s to 25s, and there are 1,460 to 5,802 ends per set.

"The temperature is held at 220° on the No. 1 cylinder and at 266° on the other three cylinders.

"Maintenance on the cylinder slashers is at least three times as much as for the hot-air type, and the supply cost for the cylinder type slasher is twice that of the hot-air type."

**Mill P**—"Our production is 111 oz. per min. on two-cylinder slashers. Size added is 12% on 31s yarn, 3,200 ends per set. Temperature of 230° F. is maintained, and we have one operator per slasher."

## 2. Slasher Squeeze Rolls—

The second question pertained to experience with various types of slasher squeeze rolls.

**Mill A**—"We use a rubber roll on the back with a yarn-wound front roll. Some of the rubber rolls have been running over three years. They are buffed twice a year. The front rolls are dressed every 8 hrs. The squeeze rolls have a dead weight of 525 lbs."

**Mill B**—"Our rolls are wool-wound rolls, front and back. We cover rolls with two layers of wool and one of cotton every 8 hrs. The rolls have 400 lbs. of pressure plus the weight of the rolls, which is 550 lbs. each."

**Mill C**—"We have used a rubber roll on the back with a wool blanket on the finisher roll for several years with very good results. The rubber rolls are buffed every six months, and two of them have been in use five years. Weight is 550 lbs. on the first roll and 750 lbs. on the finisher roll."

**Mill D**—"We are now using rubber rolls on both the front and the back. The rolls are buffed every five months, and we have been using them 2½ years. About 350 lbs. added pressure is used on the squeeze rolls, and we exchange the rolls from front to back once a week."

**Mill E**—"We have found that a rubber roll on the back and a wool blanket on the front roll are efficient. We also find that a wool-blanket or yarn-wound roll on both the front and the back are good. We buff rubber rolls every 15 months and have rolls that we've been using for five years."

**Mill F**—"We are using blankets on the front roll and rubber on the back roll in a Griffin size applicator. Rubber rolls are buffed every six months. Roll pressure is 800 to 900 lbs."

**Mill G**—"We prefer a rubber roll on the back with a wool-blanket-covered roll on the front. The rubber roll is buffed every two years."

**Mill H**—"Wool blanket covering is used on most of our squeeze rolls. Wool-yarn-wound squeeze rolls are used on our hot-air and four-cylinder slashers. Synthetic-rubber rolls are used only on the back roll on two slashers. These synthetic rolls have been in use almost two years and have been buffed only once."

**Mill I**—"We use rubber rolls on the front and back. There is no set schedule of buffing; it is done as needed."

**Mill J**—"Rubber rolls on the back with wool blankets on the front give good results; wool-blanket rolls on both the front and back are better but are more expensive. We buff rubber rolls every two years."

### Rolls Are Changed Front to Back

**Mill K**—"Our rolls are rubber on the back and yarn-wound on the front. Rubber rolls are buffed once a year or as needed. The life expectancy of the rubber rolls is about 10 years."

**Mill L**—"We use rubber rolls on the front and back and buff them every nine months."

**Mill M**—"Our experience with synthetic rolls, front and back, has been favorable. These rolls are buffed every six months. We are able to dress the warp so that it weaves satisfactorily and does not streak when it is dyed, even if it is not desized."

**Mill N**—"We use rubber rolls, front and back. Usually we run a roll about eight weeks as a finisher roll and about eight more weeks as a back roll before buffing."

**Mill O**—"We run wool blanket on both the front and back rolls. These blankets are run for 40 hrs. per yd. of blanket on the roll."

**Mill P**—"We have two slashers using rubber-covered rolls on the front and back. After the front roll was buffed, we had 2% more size pickup. The rolls are buffed every six months."

## 3. Pneumatic Presser Rolls—

**Mill A**—"We have one slasher equipped with an air-operated presser roll at the loom beam. It is very satisfactory."

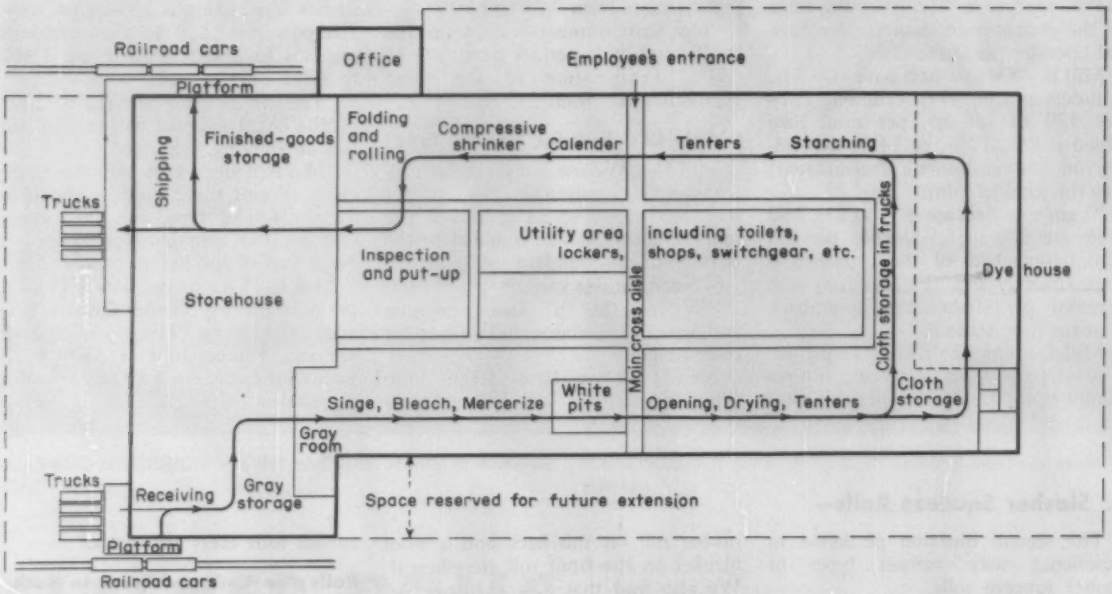
**Mill D**—"We have added pneumatic presser rolls to our cylinder-type slashers and get very smooth warps without ends rolling."

**Mill G**—"With an air-operated presser roll, we increased our yardage on the loom beam by 10%. The operation is much easier on the slasher operator with this roll."

**Mill H**—"We are using hydraulic presser rolls on two slashers, and they are very satisfactory. We average 100 yds. more yarn per loom beam on sets of 4,350 to 5,800 ends of 14½s, 16s, and 20s yarn."

**Mill L**—"Our pneumatic presser rolls make doffing easier, add 10% more yarn per beam, and reduce safety hazards."

**Mill M**—"We can maintain a constant pressure and make a firmer warp with a pneumatic presser roll. We put approximately 12% more yarn on the beam. We have not had any trouble with the pneumatic presser rolls and are putting them on all our slashers."

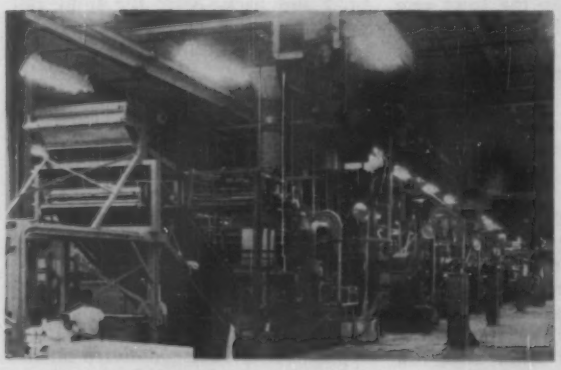



U-SHAPED LAYOUT of Kendall's new plant concentrates receiving and shipping at one end of the plant.

# Kendall's BETHUNE BLEACHERY Gets Into Production

At Bethune, S. C., The Kendall Co.'s new finishing plant has completed its shake-down period and is rapidly approaching full production. Features of the plant include—

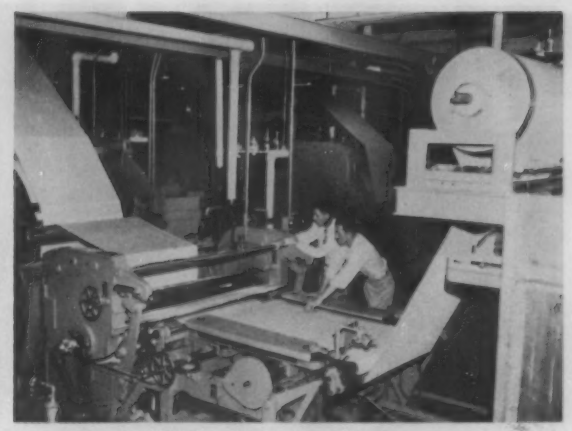
- A continuous bleaching range
- Centralized warehousing
- Provision for expansion



PRIMARY PRODUCER is this two-stage continuous bleaching range. Each unit may be run independently through separate control stations.

SERVICE AREA is at center of plant and provides for laboratory, shops, toilets, and lockers. Construction is glazed tile and hardened concrete floors.

WHITE BINS with glazed tile walls hold 9,000 lbs. of goods each. Automatic pilers reduce labor of storing goods to absolute minimum.



COMPRESSIVE-SHRINKAGE RANGE is of the latest type and utilizes a rubber belt to produce the necessary shrinkage. A Palmer unit completes the range.

COMPLETE FACILITIES FOR BLEACHING, mercerizing, dyeing, and finishing are provided in the Bethune unit of The Kendall Co.

The building is built of jumbo brick, lined with structural tile, and is 864 ft. long and 342 ft. wide. At the warehouse end, the width is 442 ft. Excluding mezzanine areas, the plant provides 330,000 sq. ft. of working and storage space. The concrete floors have been given a hard-surfacing treatment by the Kalman process.

The roof is precast concrete slabs with Foamglas insulation. Kendall has not air conditioned the production areas but has provided an extensive air-change system and some evaporative cooling. Office areas are air conditioned.

Warehousing at the Bethune plant is all done at one end of the building. Gray goods are received, stored, and started into process on one side of the warehouse; and finished goods are stored on the opposite side. There is a railroad siding at each side, and trucks can be accommodated at the dock that runs the length of the warehouse area.

### Wells Provide Water

The plant gets its water supply from deep wells that provide 2¼-million gals. of soft water per day. A reservoir provides storage for 2¼-million gals. of water, and 150,000 gals. of water are stored in an elevated tank for fire protection. Present consumption is about 1-million gals. per day.

Kendall's boiler house is equipped with two 65,000-lbs.-per-hr. Babcock & Wilcox coal-burning water-tube boilers. Coal is conveyed from the car to large hoppers from which it is fed to the boilers.

Ashes are removed from the pits hydraulically and are carried to the edge of a swamp some distance from the plant.

### Goods Move Smoothly

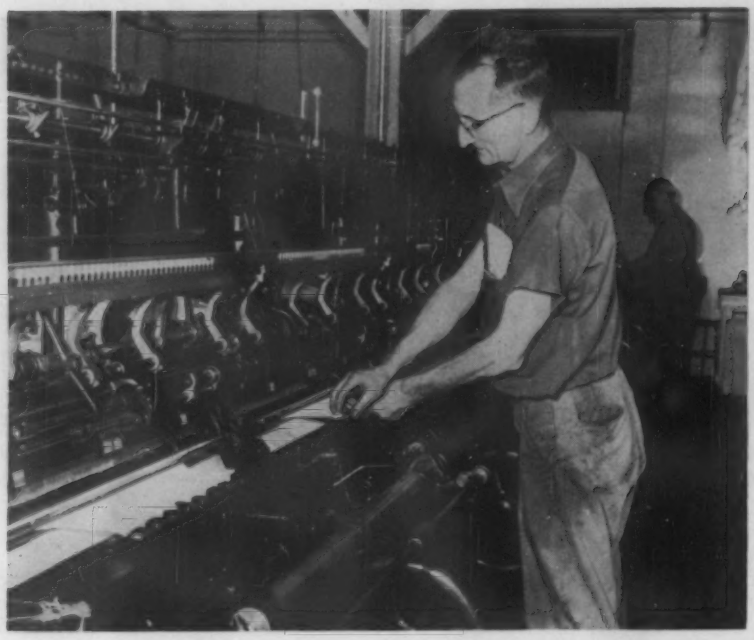
Goods in process follow a U-shaped path that takes them through the plant with no back tracking. The system concentrates receiving and shipping in one warehouse.

Kendall has mechanized materials handling with fork trucks that handle rolls or bales. An interesting angle is the method of handling rolls of unwrapped gray cloth. Kendall has

CONTINUED ON PAGE 176

MATERIALS HANDLING is strictly modern. Kendall uses its own trailers to move rolled goods from nearby manufacturing plants to the bleachery.

HIGH-SPEED TENTERS preceded by a stack of high-pressure stainless-steel cans give Kendall plenty of drying capacity. Continuous batchers eliminate stops between rolls.



KNITTING is done in an air-conditioned room on multisection machines. The number of stitches per inch are counted every day on sweaters from each section.

# How Ladd Knitting Mills Produces FULL-FASHIONED SWEATERS

• Now the largest full-fashioned-sweater producer under one roof, this former hosiery mill produces up to 3,200 doz. sweaters weekly. Up to 50 different operations are necessary to make some sweater styles. The basic operations are outlined here.

THREE YEARS AGO, Ladd Knitting Mills, Inc., Reading, Pa., was a well-known manufacturer of women's full-fashioned hosiery. Because of far-seeing management, the mill switched to full-fashioned-sweater production in 1954. Since then, the mill has grown so that the payroll has swelled tenfold; and the mill is now the largest full-fashioned sweater mill under one roof.

The transition from hosiery to sweaters has not been easy. Although a few hosiery techniques have been retained and some of Ladd's highly skilled workers were hosiery workers, many new skills had to be learned. New machines have been installed, and new methods of production have been worked out.

Cardigans, twin sets, and pullovers, sold under the Talbott label, are produced from yarn to finished garment. The mill does its own dyeing and finishing. Up to 50 distinct operations are necessary to produce some sweater styles.

### All Yarns Are Tested

The principal yarns used for Ladd's sweaters are Orlon, Ban-Lon, and wool-fur blends. Yarns are made to the specifications of Ladd's technicians; and they are tested in the mill's laboratory for twist, size, moisture, shrinkage, and oil content before they are knitted.

Rib cuffs and other trimmings are knitted on Dubied and Stoll flat-bed machines. Up to four strips of ribbing are knitted on each machine, and they fall into aluminum boxes.

To identify the yarn and keep wrong yarns from being used, the tips of the yarn cones are painted with different colors. Signal colors are also used in the Durene yarns knitted between each rib piece to identify the various parts of each garment.

Small lots of yarn left over from orders are knitted on a small circular machine to provide bands for tying up the knitted pieces. Trimmings are tied in 10-doz. bundles, and the sweater bodies are processed in 1-doz. lots. Faulty pieces of fabric are unraveled on a Foster cone winder, and the yarn is reknitted into perfect garments.

Reading full-fashioned machines are used to knit the sweater bodies. These machines, mostly 21 gauge, knit from 8 to 20 garment pieces. Each

RIB TRIMS and cuffs are knitted on flat-bed machines. The knitted pieces are separated with a signal color for easy identification of style.

LOOPING is an important operation where strong, smooth, neat seams are required. Single-thread cup seamers are used for side seams.

knitting machine has its own topping stand close to each machine.

### Samples Are Tested

Representative samples are also selected from each lot knitted and tested in the quality-control laboratory for size and appearance after the garments have been put together.

After the change-over of a style, 4 or 5 doz. sweaters are completed and checked for size and quality. Knitters make out a special report on faults, and this report is sent to the quality-control laboratory. In addition, the production superintendent spot-checks sweaters for size, fit, and general construction.

Tickets that travel with the garment pieces through assembly are printed on a Dennison machine to show the size, color, and style. Various operations to coincide with the style are preprinted on the tickets in perforated sections, which are removed by the operator as the job is completed.

Assembling the various parts of the sweater requires high skill, and the production on some operations is only a few dozen daily. Many operations are done on 14-point looping machines to give a smooth, clean, neat join. Two-thread loopers are used where strong seams are required, and single-thread looping is done on finishing operations.

Production routing differs for each style. Some rib trims are separated and looped after dyeing. Where dyed sweaters are looped, yarn used for the bodies is knitted, dyed, and rewound on cones for looping to insure a perfect match.

Single-thread cup seamers are used for seaming the sides, and two-thread seamers are used for the cuffs after the sleeves have been seamed. All seam ends are bar-tacked for security. Tail ends of seams are automatically removed by passing the ends over the orifice of a Trimaster machine that sucks the ends away from the garment and cuts them off.

### Sizes Are Carefully Marked

A colored thread is inserted in the neck during neck looping for easy identification of size. A further precaution is taken to prevent the wrong assembly of parts by marking the size of the sweater in the fashion marks.

Some garments, such as cardigans, are dyed before they are completed. This work is done in a separate section. Thread, tape, and buttons are ordered to match the sweater fabric.

A Glowmark machine is used to mark the buttonhole and button positions, and a special lamp is used on the sewing machines to pick out the marks. Buttons are pulled through the holes with a wire tool, the loose ends are cut, and the cardigans are inspected.

Many finishing operations are performed by hand. The goods are then inspected and turned to the correct side and inspected on the face side. Each sweater is then folded neatly for easy storage and handling. Sweaters are stored in bags until they are required for dyeing.

Sweaters to be dyed are placed in net bags made of synthetic fibers. Nets with the same fiber content as the sweater, which may pick up the dyestuff, are never used. Dyeing is done in paddle dyeing machines to get the necessary penetration.

Dye lots may be up to 30 doz. sweaters, and a sweater is taken from each batch to check on the shade after the standard dyeing time. When the shade is an exact match to the sample, the goods are hydroextracted and tumble-dried.

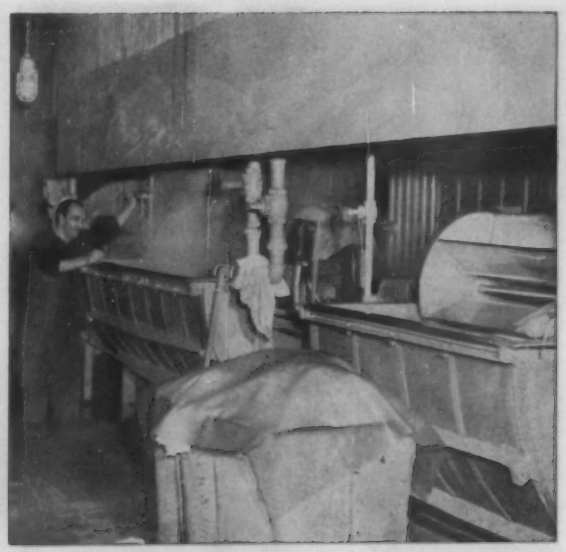
### Steam Presses Are Air Cooled

Pressing is done on single-bed and twin-bed steam presses. Some styles are pressed at a stage during assembly to make a certain operation easier to perform. Refrigerated air is blown over the presses to keep operators cool and comfortable.

After pressing, each sweater is given a thorough inspection. In addition to checking for flaws in manufacture, the examiners measure each sweater for length, width, and sleeve size. Specifications and tolerances for the basic styles are placed in front of each examiner.

Final mending and labeling are the

AUTOMATIC TRIMMING of the loose ends is done on this machine, which sucks away the loose ends. All ends are bar-tacked for additional security.



DYEING is done in stainless-steel paddle machines. The sweaters are dyed in nets made from synthetic fibers, and up to 30 doz. sweaters are dyed at once.

next operations. Washing instructions are packed with each garment. Sweaters are then folded around stiff cardboard inserts and packaged in printed polyethylene bags, and the bag is placed in a box ready for shipping.

Most sweaters go through these many operations in eight to nine weeks. Control stations are located at various positions through the mill to keep the production working smoothly.

Style and color changes are made for spring, summer, and back-to-school seasons. Brilliant colors are created at these times by the mill's chemists, although white and black remain popular.

Production and design staffs work in close collaboration with the styling department, which watches style trends. I.B.M. controls are used to calculate style trends, and production patterns follow the trend pictures.

Because full-fashioned sweaters require so much labor, Japan with her cheap-labor costs threatens the domestic production. Ladd's president, L. C. Laufbahn, has therefore curtailed plans for the production of these sweaters, and further expansion would probably be in other fields.

STEAM PRESSING follows tumble drying, although some sweaters are pressed during assembly to facilitate handling. Each press has a cool air duct for comfortable working conditions.

MEASURING the width, length, and sleeve size of each sweater is an important part of the final inspection. Measurements must match up to the specifications.

# CARDING PRACTICES Vary In Many Georgia Mills

**Georgia's textile operating executives, meeting in Atlanta recently, found that carding practices vary greatly from mill to mill. Although the mill men generally agreed on many phases of operations, opinion differed on—**

- **Nylon condensers at the cards**
- **Lap waste at the cards**
- **Nep-determination methods**

RELATIVELY ROUTINE SUBJECTS were discussed at the spring carding session of the Textile Operating Executives of Georgia, held at Georgia Tech recently.

Among the topics covered were: the blending of natural and dyed fibers, high-compression calender rolls, nylon condensers for cards, nep-determination methods, and lap waste at the cards.

### Blending Hoppers Are Used

Dyed and natural stock are blended at the feeder hoppers by nine of the mills reporting on the subject. One mill believes that the best place to blend stock is at the finisher picker. Reports are:

**Mill F**—"We blend our dyed stock with natural stock in six blending hoppers that feed via a conveyor apron to a bale press where the stock is rebaled. Bale weights are equalized in units of four bales each.

"Usually, we run 48 bales to a set and line up two four-bale units to blend in each hopper. The operator feeds from the four-bale units. For small blends, each hopper feeding is weighed."

**Mill I**—"Five hopper feeders supply five blending feeders in our blending room. Stock from all the feeder hoppers is combined and mixed before it is fed to the blending feeders.

"We time and weigh production from each hopper to make sure each one is producing the same amount of stock. When we blend synthetic fibers, only the blending feeders are used."

**Mill J**—"We use seven hoppers for natural stock and one for dyed stock. The hoppers feed through a blending machine, gyrator, two-beater cleaning section, and Super-Jet to the picker. First-run picker laps are fed through the line again."

**Mill R**—"To make a 50% blend of acetate and viscose, we make two mixes and combine them in one basket. Each mix consists of 25 lbs. of acetate and 25 lbs. of viscose. Each basket, containing 100 lbs. of fiber, is fed into a separate hopper. The hoppers are allowed to run out before they are recharged."

### Bigger Picker Laps Are Made

Three mills reported on the use of high-compression calender rolls on pickers. Lap weights and length show marked increases, but handling methods remain the same. Work assignments at the cards were increased in two mills. Reports are:

**Mill C**—"The calender rolls permitted us to increase the weight of our 13½-oz., 44½-lb. lap to 60 lbs. Diameter (18 ins.) remained the same. Length increased from 55.25 yds. to 70 yds."

**Mill D**—"We increased the weight of our 50-lb. lap to 71½ lbs. The diameter increased about 1 in."

**Mill I**—"Our lap weight went up from 59 lbs. to 69 lbs.; diameter remained the same."

### Nylon Condensers Wear Fast

Of the 10 mills reporting on the use of nylon condensers on cards and drawing frames, all said that the condensers put more sliver in the can. But about half of the mills complained that the condensers wear out too fast. Reports are:

**Mill C**—"Nylon condensers on our cards increased the weight of sliver in the can 10%, and we found no difference in variation."

**Mill D**—"Our main objections to nylon condensers are that they cannot be gauged and they wear rapidly."

**Mill M**—"The condensers increased our doffing time 12½%, but after two months the trumpets were so worn that we could not maintain the increase."

**Mill Q**—"Nylon condensers on our cards increased the amount of sliver in the cans about 40%. We were able to increase work assignments 9%."

**Mill Z-1**—"After two years of use, we are getting good compression on our stock with nylon condensers. There is some evidence of wear, but we are still putting 12½% more sliver in the cans."

### How Mills Count Neps

Most of the reporting mills make some form of regular nep determination. The majority place a sample of the web under a 10x5-in. glass marked off in square inches for counting. Some mills check a sample taken from the entire width of the web. Others use the template developed by N. C. State College. Only a few mills take the weight of the web into consideration. Reports are:

**Mill A**—"Regular nep counts are made at the middle of the stripping cycle. A sample of the web is placed on a blackboard and covered with a 10x5-in. piece of glass marked off in 1-in. squares. Samples from the two sides and center of the web are counted. Weight is not taken into consideration since all of our sliver is 62 grains per yard."

**Mill F**—"We place a board covered with black velvet under the card web and pick up the entire width of the web. Another board that has 30 round holes, each with an area of 1 sq. in., is placed over the web. Neps showing through these holes are counted, and the number is converted to the equivalent of 100 sq. ins. of web. We do not consider the weight of the stock."

**Mill N-1**—"We use the template, developed by N. C. State College, that measures 20 sq. ins. of web at one time. Five samples are taken across the face of the web. Weight is not considered."

**Mill U**—"A black-felt-covered board with a metal plate hinged to it is used for our nep counts. The plate has 20 round holes spaced uniformly, and each hole has an area of 1 sq. in.

"All neps are counted, regardless of

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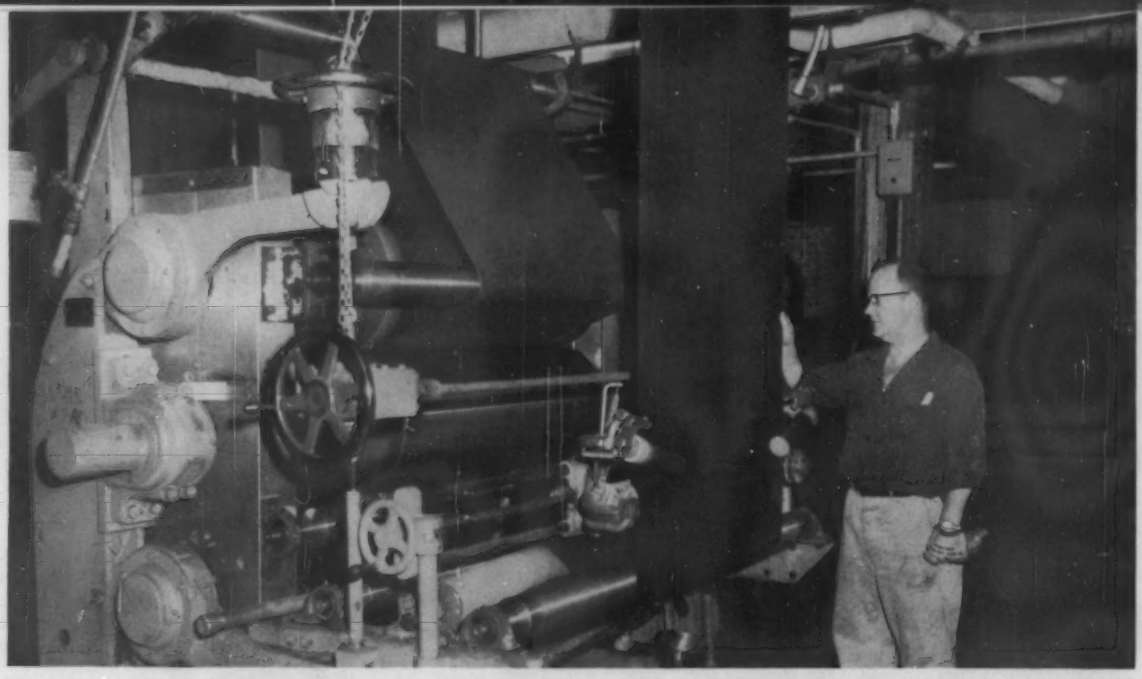


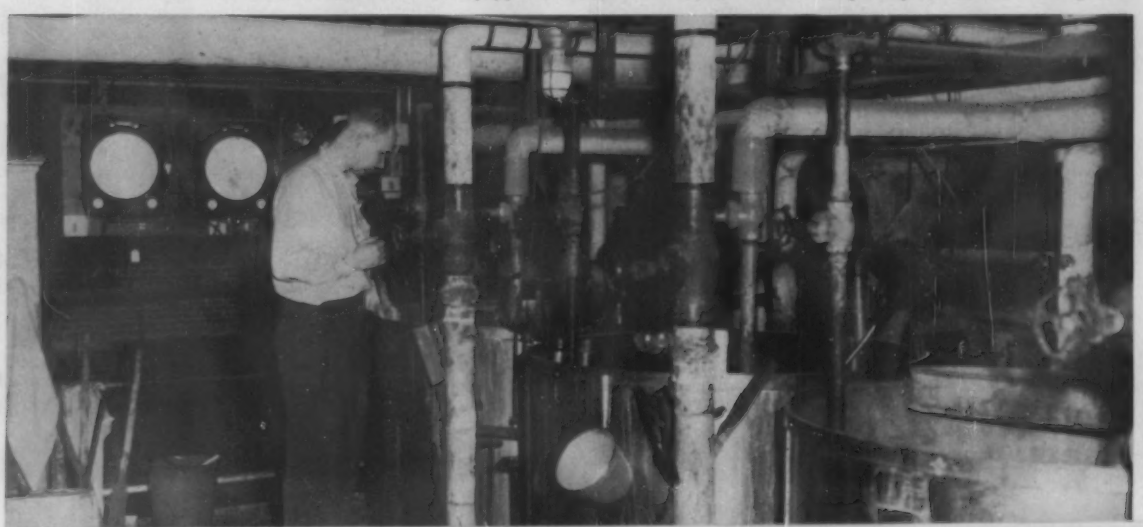
FIRST DYE PAD is a three-roll pad with mechanically set pressure. The counterbalanced roller near the top takes the place of the older and bulkier compensating gate.

# *Versatility Keynotes Merrimack's New* ***DYE RANGE***

A streamlined continuous dyeing range that can be hooked up in several different ways for a variety of dyeing processes has just gone into production at Merrimack Mfg. Co., Lowell, Mass. The range features:

- All stainless-steel construction
- Reversible dry cans
- Outboard bearings
- All-fabricated construction
- Unusual versatility

MIXING EQUIPMENT is all stainless steel. Tubs are equipped with open steam jets, closed heating coils, stirrers, and cooling coils.



A BETTER JOB AT LOWER COST is being produced by Merrimack's new continuous dyeing range. The Lowell, Mass., plant manufactures and finishes corduroys and velveteens. Both fabrics require a lot of labor in the finishing process before they are ready for the market, and operating costs of the older dyeing equipment were steadily increasing.

Merrimack and Cook Machine Co. of Nashua, N. H., got together and discussed the plant needs. Then Cook went ahead.

Many of the conceptions on which dyeing equipment have been based were set aside in the design of the new range. In place of castings, fabricated stainless steel has been used for all roll stands except the two heavy dye pads. The stands for these pads are heavy steel plate. Except for bearing housings, there are no iron castings in the entire structure.

Pressure to the dye-pad rolls is applied through the Micro-set system, but for all other nips compressed air is used.

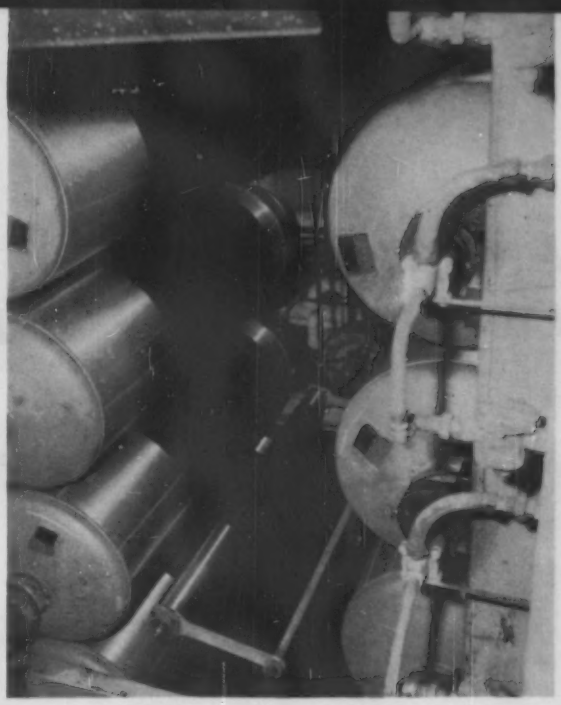
Basically the range consists of two pads, a stack of reversible cans, and a steamer followed by the usual oxidizing, soaping, and rinsing boxes.

The one element of reversible cans adds versatility to the range.

Control of tensions, which is extremely important in corduroy finishing, is through counterbalanced rollers mounted between each stage of the range and between stacks in the cans. Direct connections through chain drives from roller shafts to rheostats vary speeds to keep tensions between all units exactly where they are wanted.

Merrimack dyes vats, naphthols, directs, aftertreated directs, and soluble-vat dyes on this range. Provision for variable heat on the first stack of drying cans assures a minimum of trouble from pick-off when naphthols are run.

The dye pads are rigged so that goods may be immersed in the dye liquor or slop-padded. Very small color boxes, necessary for some dyes and usually desirable for any color, are equipped with pumps so that color can be returned to the mix if necessary.

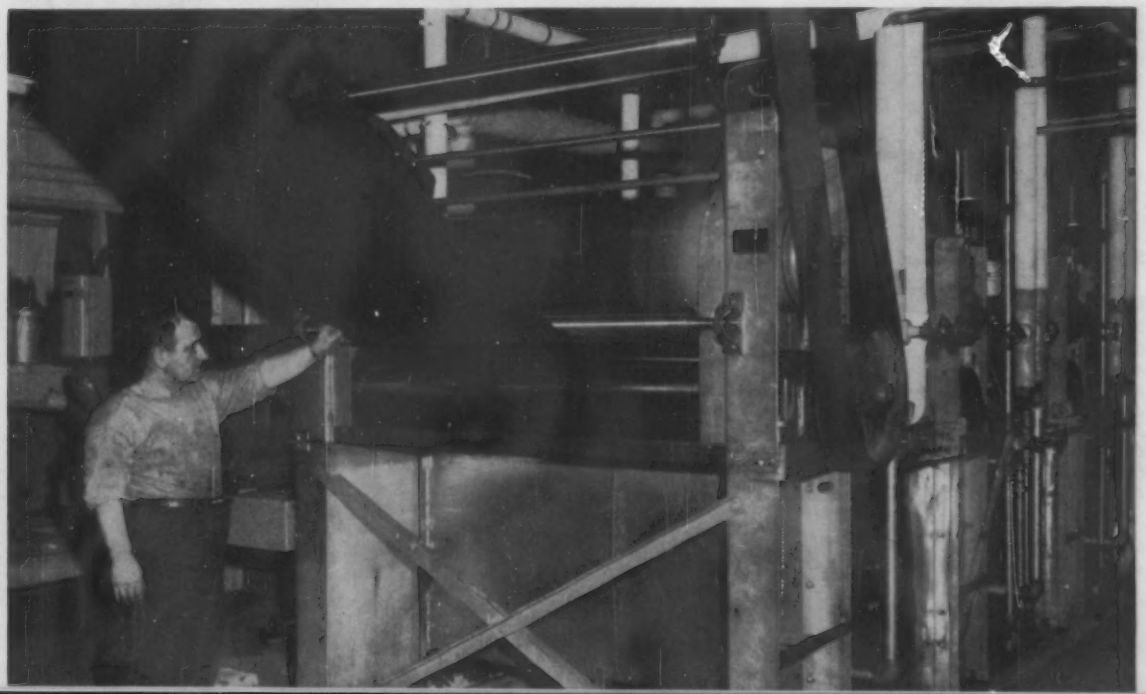


**STAINLESS-STEEL CANS have antifriction bearings, temperature control, and tension control between stacks. The drive is through a double V-belt.**

On a mezzanine floor, a series of stainless-steel 200-gal. tanks has been installed to carry the dye mixes. All the tanks have open and closed heating systems and electric mixers.

Several are equipped with cooling coils so that low temperatures can be maintained on the heat-sensitive coupling salts of naphthol colors. A refrigerating unit produces the necessary chilling effect.

**DELIVERY END of dyeing range shows light but strong construction of fabricated steel. Final roll stand will carry 10 tons' pressure easily.**



# Alabama Mill Men Compare LOOM SUPPLY COSTS

**At their spring meeting at Auburn, Ala., the Alabama Textile Operating Executives discussed the service life of various loom parts. Among the items discussed were—**

- **Shuttles**
- **Linkage parallels**
- **Nylon shuttle loops**

THE WEAVING SECTION of the meeting began with a discussion of shuttles. Most of the mills reporting are using dogwood shuttles. Few of them have used plastic or fibre shuttles long enough to have accurate data.

Reports by mills are:

**Mill A**—"Our average shuttle life on 36-, 40-, and 44-in. X-model looms is 2,040 loom hours. We use dogwood shuttles."

**Mill B**—"Only eight molded plastic shuttles have been replaced on 570 looms in six months of use. The looms are 40-in. E-models running at 168 ppm. Our average shuttle life before changing to the present type of shuttles was 3,000 loom hours."

**Mill C**—"We use dogwood shuttles, but experiments with plastic shuttles have been satisfactory. Our average shuttle life is: 40-in. E, 175 ppm., 2,150 loom hours; 32-in. X, 172 ppm., 1,750 hrs.; 40-in. X-2, 192 ppm., 1,925 hrs."

**Mill D**—"We use dogwood, fibre-side, and Duraweld shuttles. Shuttle life for dogwood shuttles is 3,000 loom hours on 42- and 44-in. E-model and 44-in. K-model looms operating at 158 ppm. On 50-in. X-P looms running 152 ppm. with fibre-side shuttles, the shuttle life is 4,080 hrs.; the life of the same type of shuttle is only half as much on X-2 looms running at 165 ppm.

"We've made only two replacements of Duraweld shuttles on 95 E-model looms in almost a year of operation."

**Mill E**—"Our shuttles are dogwood, and shuttle life is 1,757 loom hours on 40- and 42-in. E-model looms at 163 ppm. On 60-in. X-2 looms, 171 ppm., the shuttle life is 945 hrs."

**Mill F**—"Our looms are 40-in. K-model, 30- and 36-in. E-model, and 44-in. XP. They operate at 165, 177, and 162 ppm. Average shuttle life is 2,428.69 loom hours for dogwood shuttles."

**Mill G**—"The average life of our dogwood shuttles is : 36-in. E, 162 ppm., 1,750 loom hours; 40-in. X, 182 ppm., 1,675 hrs.; 40-in. X-2, 192 ppm., 1,000 hrs.; and 48-in. X, 172 ppm., 1,450 hrs."

**Service Life of Dogwood Shuttles**

| Loom model | Ppm. | Loom hours |
|---|---|---|
| 32-in. E | 172 | 2,688 |
| 32-in. X | 172 | 1,584 |
| 40-in. E | 163 | 1,828 |
| 44-in. E | 160 | 2,163 |
| 46-in. X-2 | 182 | 2,830 |
| 54-in. XP | 144 | 1,863 |
| 60-in. X-2 | 160 | 1,138 |
| 64-in. XP | 145 | 1,102 |
| 66-in. XP | 131 | 2,666 |

SHUTTLE LIFE of nine models of looms was given by Mill K.

**Supply Cost per 1,000 Loom Hours**

| Loom | Ppm. | Fabric | Cost |
|---|---|---|---|
| 32-in. E | 172 | Duck | $7.30 |
| 32-in. X | 172 | Duck | 8.30 |
| 40-in. E | 163 | Duck | 11.30 |
| 44-in. E | 160 | Drill, twill | 11.30 |
| 46-in. X-2 | 182 | Moleskin | 8.15 |
| 54-in. XP | 144 | Duck | 11.00 |
| 60-in. X-2 | 160 | Drill, sheeting | 11.40 |
| 64-in. XP | 145 | Enamelling duck | 13.70 |
| 66-in. XP | 131 | Duck | 16.90 |

SUPPLY COST for nine models of looms on several fabrics was given by Mill K.

**Wide Looms Are Easy on Shuttles**

**Mill H**—"We use dogwood shuttles on XP and X-2 looms 60 ins. wide running 146 to 163 ppm. Average shuttle life is 3,000 loom hours."

**Mill I**—"Our shuttles are dogwood. On 22-in. E-model looms at 182 ppm., the shuttle life is 2,800 loom hours. On 40-in. X-2 looms at 192 ppm., the shuttle life is 1,800 hrs."

**Mill J**—"Average dogwood shuttle life is 1,350 loom hours on 40-in. X-2 looms running 192 ppm. On 40-in. X-model looms at 182 ppm., shuttle life is 1,600 hrs."

**Mill L**—"On 22-in. XK looms at 182 ppm., the average life of our dogwood shuttles is 2,300 loom hours."

**Mill M**—"On 32-, 40-, and 42-in. D-model looms at 145 to 158 ppm., our shuttle life is 803 loom hours. On 54- and 64-in. XP and 64-in. D-model looms running 132 to 152 ppm., the shuttle life is 846 hrs. We use dogwood shuttles."

**Mill N**—"On 42-in. X-2 looms at 180 ppm., our dogwood shuttles have a service life of 2,232 loom hours. We are using some molded plastic shuttles on E-model looms and like them, but we don't have shuttle life data on them."

**Mill O**—"We use dogwood shuttles with a fibre-clad bottom. Shuttle life is 1,800 loom hours on 36-in. X-model and 40-in. X-2 looms at 182 ppm. On 46-in. X-model and X-2 looms at 178 ppm., the shuttle life is 1,500 hrs. The 54- and 60-in. XP and 60-in. X-2 looms running at 154 to 160 ppm. have an average shuttle life of 1,200 hrs."

GENERAL CHAIRMAN Oliver Smythe of Pepperell presided at the TOE meeting.

WEAVING DISCUSSION was directed by Bill Brown of Shawmut, Ala.

**Mill P**—"Our dogwood shuttles have an average life of 3,000 loom hours on 40-in. E-model looms operating at 172 ppm., and 2,400 hrs. on 42-in. X-2 looms at 191 ppm."

### Supply Costs Are Reported

Loom supply costs were reported by different mills as ranging from a low of $6.05 per 1,000 loom hours to a high of $32.12:

**Mill A**—"Our loom supply cost is $13.96 per 1,000 loom hours. Service life of shuttles is 2,040 hrs.; pickers, 693 hrs.; checkstraps, 2,515 hrs."

**Mill B**—"Loom supply cost is $10.95 per 1,000 loom hours. Service life of pickers is 1,946 hrs., and checkstrap life is 3,000 hrs."

**Mill C**—"On our 40-in. X-2 looms, the supply cost is $9.00 per 1,000 loom hours. For 40-in. X-model looms, it is $11.90 per 1,000 hrs. For 32-in. X-models, it is $8.96 per 1,000 hrs. Cost is $6.51 per 1,000 hrs. for E-model looms.

"On our shuttles, we get service life of 1,750 to 2,150 hrs. The average life of pickers is 1,400 hrs.; and for checkstraps, the life is 4,040 hrs."

**Mill E**—"Based on records for the last six months, our supply cost is $9.60 per 1,000 loom hours. The life of shuttles varies from 957 to 1,757 hrs., pickers from 207 to 1,016 hrs., and checkstraps from 573 to 3,782 hrs."

**Mill G**—"Our supply cost per 1,000 loom hours is: 40-in. X-2 at 192 ppm., $28.20; 40-in. X-model at 182 ppm., $23.10; and 36-in. E-model at 162 ppm., $16.10.

"Service life of shuttles varies from 1,000 to 1,750 hrs., pickers from 566 to 1,495 hrs., and checkstraps from 3,752 to 5,141 hrs."

### Costs Vary for Different Looms

**Mill I**—"Our loom supply cost is $17.00 per 1,000 loom hours. Shuttle life is from 1,800 to 2,800 hrs., pickers 720 hrs., and checkstraps 1,000 hrs."

**Mill J**—"On our 40-in. X-2 looms, the supply cost is $21.80 per 1,000 loom hours; and on the 40-in. K-model looms, it is $19.82. The shuttle life is 1,350 and 1,600 hrs., pickers 683 and 867 hrs., and checkstraps 3,540 and 1,700 hrs."

**Mill L**—"Our loom supply cost is $24.26 per 1,000 loom hours. Life of shuttles is 2,300 hrs., pickers 1,200 hrs., and checkstraps 1,500 hrs."

**Mill M**—"Our loom supply cost is $32.12 per 1,000 loom hours. We have wide D-model and XP looms. Shuttle life varies from 801 to 1,049 hrs., pickers from 579 to 848 hrs., and checkstraps from 784 to 1,396 hrs."

**Mill N**—"Exclusive of harness, reeds, heddles, and drop wires, our repair cost has been $17.00 per 1,000 loom hours. Shuttle life is 2,232 hrs., pickers 547 hrs., and checkstraps 1,350 hrs."

**Mill O**—"Our loom supply cost is $17.07 per 1,000 loom hours. Shuttle life is 1,650 hrs., pickers 900 hrs., and checkstraps 1,350 hrs."

**Mill P**—"On E-model looms, our supply cost is $6.05 per 1,000 loom hours. For X-2 looms, it is $9.10. Shuttle life on E-models is 3,000 hrs.; and on X-2 looms, it is 2,400 hrs. The serviceable life of pickers on E models is 1,500 hrs.; and on X-2 looms, it is 451 hrs."

Opinion was about evenly divided on the advantages of using nylon loops to replace fur and bristles in the shuttles. Some mills reported good results with the loops, while others had tried and discarded them for various reasons.

### Few Endless Checkstraps Are Used

Most mills reported little or no-experience with endless checkstraps, but four mills reported:

**Mill D**—"The endless checkstraps will outlast the conventional straps three to one. We turn our straps every week on X-2 looms operating at 165 ppm."

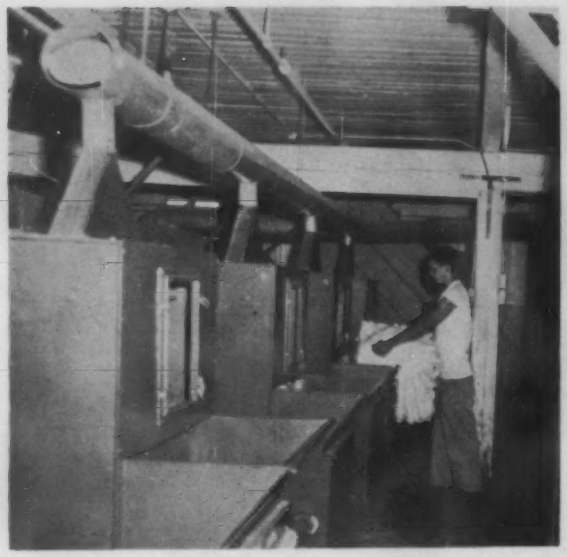
**Mill G**—"On 40-in. X-model looms, the endless checkstraps have only 22% longer service life than the conventional straps but cost 104% more."

**Mill J**—"All our X-2 looms have endless straps; we believe we get better results from them, but we have made no actual comparison."

**Mill K**—"We have been using endless checkstraps for several years on some loom models and conventional straps on others.

"We think that on certain looms at lower speeds the endless checkstrap does a good job at less cost. On high-speed looms, we prefer conventional straps."

Very few mills reported experience with linkage-type parallels. It was generally agreed that this type of parallel has good possibilities but has not yet been perfected.



OPENING-ROOM MACHINERY was equipped with special beaters that give extra cleaning.

COTTON after being opened and cleaned is stored in this room to fluff until needed.

# *Falls Tightens Up* CARDING *To Improve Combed Yarn*

**• Card-room improvements at No. 2 Mill, Falls Mfg. Co., Granite Falls, N. C., are making spinning easier. Machinery was modified, Kinks that aid operations were devised, and new roving was installed. Here's how the card room operates since the changes were made—**

To supply its new Gwaltney spinning [Textile World, Nov., '56, p. 156] with larger and better packages, Falls Mfg. Co., Granite Falls, N. C., made several changes in the card room at Mill No. 2.

Special beaters were added, clutches and drives were modified, new drafting was put in some machines, and new roving was installed.

Two lines of equipment are used in the opening room. Both lines consist basically of four Gastonia blending feeders, one waste feeder, three Superior cleaners, and a No. 11 condenser. The first line has an extra cleaner with two Buckley beaters.

Each beater in the cleaners is run at a different speed and has a different cross section. The arrangement takes out as much trash at the third beater as at the first. An extra-fast kicker roll in the condenser also does some extra cleaning.

To prevent the beaters in the cleaners from chopping up cotton when a choke occurs in the outlet pipe, Falls installed a damper in the duct work that activates a switch when the air pressure drops. All preceding machinery is automatically stopped.

### Picker Clutch Is Modified

Cotton is blown through a pneumatic pipe to the picker room in Mill No. 2. At present only one single-process H&B picker is used, but the mill plans to install a second picker soon. The extra picker will permit one-shift operation instead of two.

Falls developed a special picker clutch, now manufactured by Precision Gear & Machine Co., Charlotte, N. C., that reduces wear on the clutch teeth. Instead of large widely spaced teeth, the clutch has small comber-type teeth that travel only $\frac{3}{8}$ in. when the machine is started.

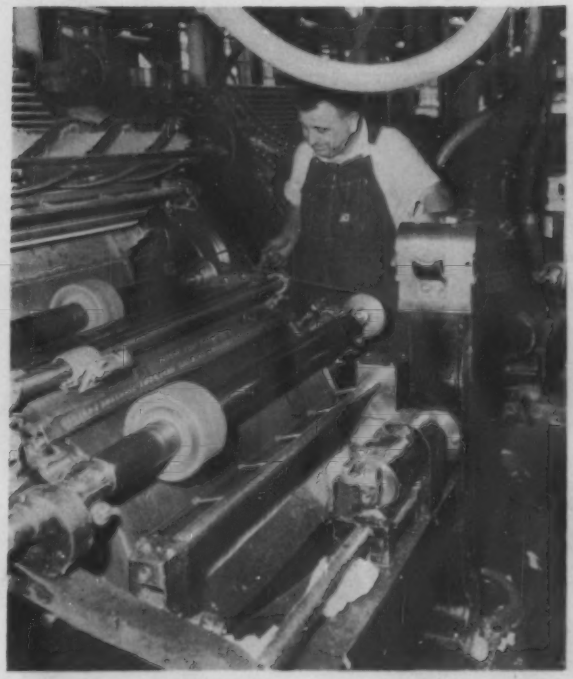
The pickers were further modified by installing beater pins that vary in shape from beater to beater. The special pins give better cleaning and blending. Beater speeds, back to front, are 1,165 rpm., 859 rpm., and 865 rpm.

About 0.2% oil is applied at the picker hopper, and moisture content of the lap is checked by a Strandberg monitor. A 14-oz., 39-lb. lap is produced every 6 mins.

A total of 50 cards with 14-in. coilers are in use. A 45-grain sliver is produced at 6 lbs. per hr. The cylinder runs 165 rpm. and the lickering 504 rpm. Other speeds are proportionate.

Cards are ground for 6 hrs. every 13 days; doffer speed during grinding is 17 rpm.

After carding, stock is drawn into a 38-grain sliver and then made into a 750-grain lap on a Saco-Lowell lap winder, 20 ends up. Laps are wound



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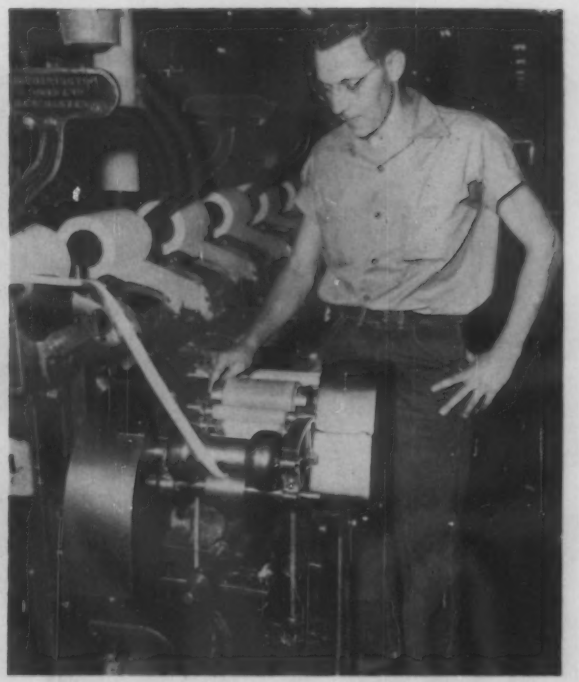


LARGE TOP ROLL was installed on combers as part of the new two-over-three drafting system.

on denim-covered steel cylinders, devised by the mill, instead of on wet wooden cores.

### Comber Has Nonslip Timer Belt

Comber laps are processed on 20 Naismith combers that produce a 55-grain sliver at 85 nips per minute. Variation is 13%.

A timer belt that does not slip was built and installed by the mill. Grooves cut in the belt fit into teeth cut in the pulley.

Draw boxes were converted from four-over-four to two-over-three drafting. A large top back roll is used to give better fiber control.

Four-over-four Saco-Lowell breaker drawing, six ends up, produces a 55-grain sliver. This sliver is fed to 19 deliveries of Saco-Lowell drawing that has been converted from four-over-four to three-over-four drafting.

A 55-grain sliver is produced at the finisher and put into a 14x36-in. can. Front-roll speed is 303 rpm.

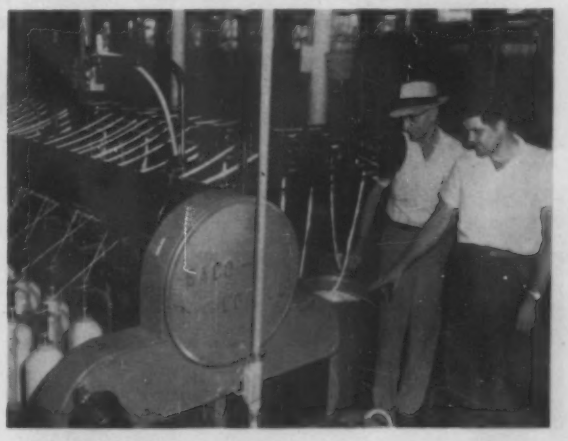
### New Roving Cuts Labor Cost

Falls spins 12s to 30s in Mill No. 2, and eight old 8x4 roving frames were replaced with four new 96-spindle FS-2 machines. Two of these frames are used to make 11x5¼ packages of 1.80-hk. roving for 22s to 30s yarn. The other two produce a 12x6 bobbin of 1.30-hk. roving that is spun into 12s to 20s yarn.

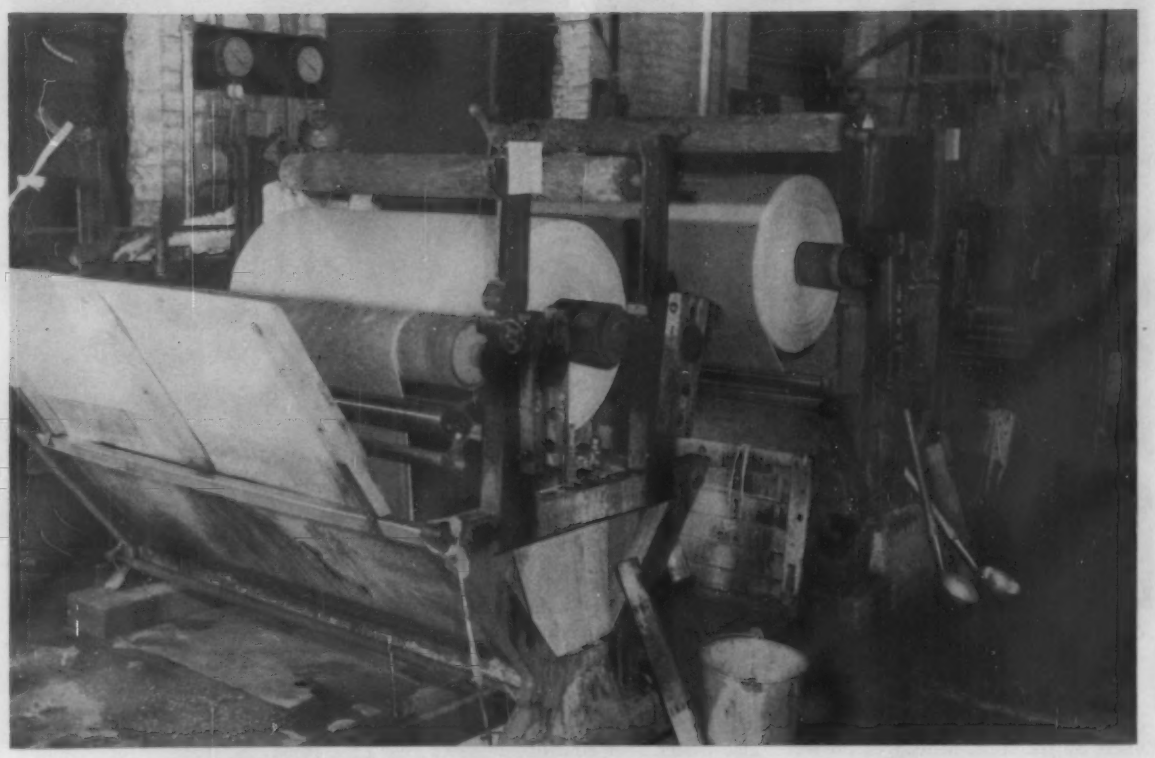
Front-roll speed for the 180-hk. roving is 132 rpm.; for the 120-hk. roving, speed is 157 rpm. Spindle speed is 800 rpm. for both sizes of roving.

One man runs all four new frames. Formerly, three men were required to operate the eight old frames.

FINISHER DRAWING was modified to handle 14x36 cans, and new drafting was installed.



NEW ROVING that makes 11x5½ and 12x6 packages cut labor costs 66% in this department.



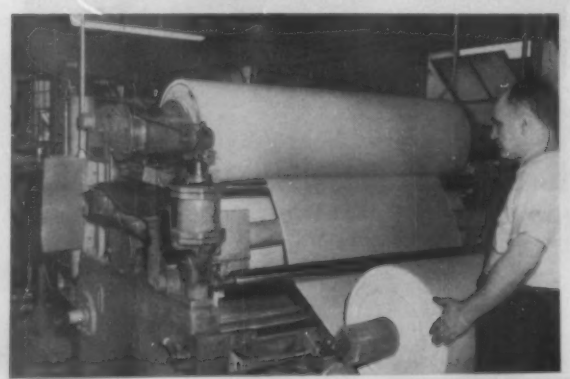
PREPARATION AND BLEACHING are done in stainless-steel-lined jigs equipped with spreaders.

# How Progressive Finishes Three-Fiber CORD FABRICS

**Three types of fiber go into one style of cord fabrics for women's suitings. Progressive Silk Finishing Co., Inc., Hoboken, N. J., finishes a mixture of cotton, rayon, and spun-dyed acetate by a simple procedure that gives—**

- **A good white ground**
- **A durable water-repellent resin finish**

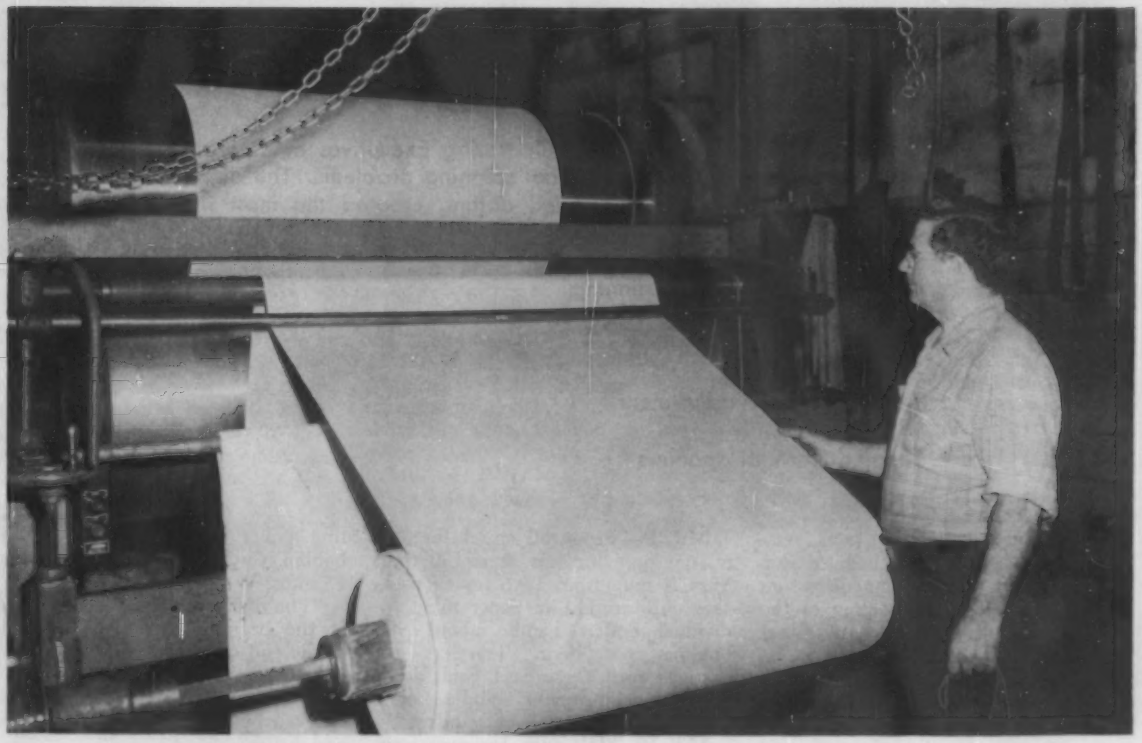
FINISHING RANGE includes pad, gas-heated tenter, and Palmer unit. The goods shown are being dried.



FINISHING LIGHT COTTON-RAYON-SPUN-DYED-ACETATE goods to come up with a fabric that will meet the consumer's expectations of durability and good appearance requires a light touch with the chemicals involved in preparation and proper finishing methods.

Progressive Silk starts its finishing process by making up 1,200-yd. rolls of the fabric. The rolls are run down in cold water in a jig and given a thorough scour for eight ends at 180° F. A synthetic detergent is used in the scour bath. After scouring, two ends in hot water provide sufficient rinsing.

A two-stage peroxide bleach is used to produce a good white. The plant has found that by using two bleach



DRYING ON CANS is the quickest and most economical way to get the bleached goods ready for finishing.

baths of moderate concentration, it gets better whites than by a stronger one-stage process.

The bleach bath is based on 2 qts. of 100-vol. peroxide to 50 gals. of liquor. The goods are run in the bath at 180 to 190° F. for four ends. Then the bath is dropped, and a fresh bath is made up at the same concentration. Another run of four ends at 180° F. completes the bleach, and then the goods are given a four-end running hot-water rinse and shelled up out of cold water.

Progressive Silk uses a vacuum extractor to remove excess water from the fabric; and after extraction, the goods are dried on a set of stainless-steel cans or a Palmer tenter unit. The choice of drying equipment at this point is mostly a matter of which machine is open at the time because drying is not a critical operation on this fabric.

### Finish Is Applied Slack

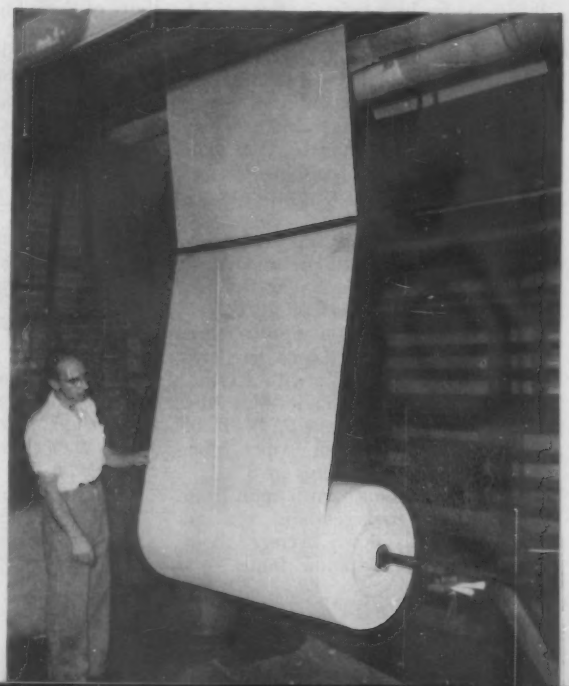
Progressive uses Permel B, a resin that combines good hand with water repellency to finish the line of cord fabrics.

The resin is made up at 25 lbs. per 100 gals., and the goods are thoroughly saturated in the mix in a light quetsch mounted in range with a tier dryer.

After drying, the goods are put through a loop dryer at 300 to 310° F. for 3 mins. and batched up on a roll. A final framing to width completes the processing.

The hand of fabrics finished in this way is smooth, crisp, and well suited to women's outerwear. The resin finish reduces the tendency to soil readily.

CURING IN LOOPER winds up the finishing operation. The goods are exposed to 300 to 310° F. for 3 mins. to cure the resin. Width is evened out on a tenter.



# Georgia Mill Men Discuss Tough SPINNING PROBLEMS

**About 250 members of the Textile Operating Executives of Georgia met at Georgia Tech recently to talk about spinning problems. The discussions on big spinning rings and scheduled doffing created the most interest. Other topics included—**

- **High-draft systems for spinning**
- **Quilled versus spun filling**
- **Traveler-cleaner adjustment**
- **Tangled yarn at spoolers**

EXPERIENCES WITH LARGE SPINNING RINGS and scheduled doffing featured the spinning discussion at the annual spring meeting of the Textile Operating Executives of Georgia held at Georgia Tech.

Other subjects included traveling cleaners, spun vs. quilled filling, high-draft systems for spinning, top-roll maintenance, traveler cleaners, and spooling and warping practices.

### Data Are Given for 3-in. Rings

Five mills gave production data for 3-in. spinning rings. Yarn numbers spun on the rings ranged from 2s to 21s. Reports are:

**Mill B**—"We spin from 2s to 4s yarn on a 1-in. front roll at 165 rpm. A 12-in. paper bobbin is used, and package weight for low-twist 2s is 0.536 lb.; for high-twist 2s, the weight is 0.625 lb.

"One doffer lifts 6,600 bobbins in 8 hrs., and the doffers work in pairs. Travelers are changed every 10 days, and ends down average about 60 per thousand spindle hours. We spin from a 10x5 roving bobbin. The 4s yarn is run on spoolers; coarser numbers are wound."

**Mill E**—"We spin 21s yarn on a 3-in. ring at 32,725 ft. per min. Yarn is put on a 12¼-in. straight wooden tube, and net weight is 0.60 lb. Travelers are changed once a month. Yarn is wound on a Foster cone winder."

**Mill K**—"We spin 5s with a front-roll speed of 192 rpm.; for 7.5s, the speed is 187 rpm. About 0.714 lb. of yarn is put on a 12-in. paper tube. Doffers lift 6,624 bobbins in 8 hrs.

"Soft-twist filling yarn is spun from 12x6 roving packages and run on winders. Ends down average about 40 per thousand spindle hours."

**Mill P**—"Front-roll speed for 3.5s is 165 rpm.; for 4.5s, it is 150 rpm. Yarn is spun from 12x6 roving packages onto an 11½-in. paper tube. Individual doffers handle about 900 bobbins per hour. Travelers are changed every three days. Ends down are 55 per thousand spindle hours. The yarn is processed on winders."

**Mill W**—"We spin 16s yarn from 12x6½ roving packages onto 12-in. paper bobbins that hold 9 oz. Spindle speed is 135 rpm.; travelers are changed every 120 hrs. The yarn, which averages 21.3 ends down per thousand spir.dle hours, is spooled on Barber-Colman D-4 spoolers."

### Scheduled Doffing Is Popular

Twelve mills reported on scheduled doffing for spinning, and the majority of them find such a system helpful. The usual practice is to pay doffers by the side, but one plant has a system whereby doffers receive base and incentive pay. Reports are:

**Mill B**—"The section man posts the time and place for the doffing to start. Doffers do random doffing when there are several yarn numbers on only a few frames. These frames are grouped for convenience in doffing. In one of our plants, we pay on a side-hank basis; in the other plant, we pay by the side."

**Mill C**—"Our doffers doff a scheduled number of frames in 8 hrs., and we pay by the number of frames doffed. There is a sheet of paper on each frame where the doffer marks the hank-clock reading, which gives us a check on the number of hanks per doff and the number of doffs."

**Mill F**—"Scheduled doffing of warp yarn has been done in our mill for 14 years. We spin 9s warp on a 2¾-in. ring and a 1⅛-in. front roll. A 9-in. bobbin is used. Doffing cycle is 4 hrs., 15 mins. We pay by the hank.

"The doffers mark a schedule sheet at the beginning of each shift and at the end of each round. The schedule permits a plus-or-minus variation of 5 mins. per round. Sheets are checked by the section man and second hand."

**Mill L**—"All of our frames are doffed on schedule. Less time is lost, and it is easier to keep account of sides if the range of yarn numbers is not too great.

"Doffing cycle for 30s warp is 9 hrs.; for 40s filling, the cycle is 4½ hrs. We pay by the sides doffed."

### Section Man Checks Reports

**Mill M**—"Our doffing cycle for 31s yarn is 9 hrs., 20 mins. Ring size is 2 ins., and traverse is 8 ins. For 41s yarn, spun on 1⅜-in. rings and put on 8-in. quills, the doffing cycle is 4½ hrs. The section man checks the starting and finishing points and reports the number of frames doffed. We pay by the frame."

**Mill O**—"Our mill has 518 frames spinning more than 40 different yarns on warp bobbins, and we have less than 5% short-doffed bobbins. Numbers, speeds, twists, and the lay of yarn vary greatly; so we figure the schedule after the yarn is on the frames.

"We pay by the side and arrange doffing schedules on the basis of the factors mentioned. The section man keeps the doffing boards, and he checks the time against a tally made by the doffer."

**Mill S**—"We schedule frames to be doffed on the quarter-hour; and if two different numbers happen to hit

at the same quarter-hour, we short-doff one by 15 mins. in order to keep the frames running continuously.

"A typical schedule is posted in the room for the doffers to follow. The schedule becomes a part of the payroll records. We pay by the side."

**Mill Z-1**—"Each doffer is assigned to 30 frames spinning 23s warp on a 2-in. ring. Traverse is 7 ins. These frames run 6 hrs. to the doff, and 10 frames of the group are doffed every 2 hrs. from 8 a.m. through 12 noon. The cycle is repeated every 4 hrs. around the clock. Doffers are paid by the hank."

### Quilled Filling Is Preferred

The subject of spun versus quilled filling was discussed by nine mills. Almost unanimously, the mills agreed that quilled filling is superior to spun filling in cost, quality, seconds, and the amount of yarn put on the bobbin. Reports are:

**Mill H**—"Burling cost was reduced 25%, and 15% more yarn is put on the package. Quality and appearance are better."

**Mill J**—"Quilled filling is free of slubs. We get 800 grains on the quilled package, compared with 650 grains on the spun package. We are not sure about actual money savings in production costs, but quality is definitely better."

**Mill K**—"We put 1.40 lbs. of yarn on rewound bobbins, compared with 1 lb. on spun bobbins. We believe that our equipment, running on 6.50s yarn, will pay for itself in 2.6 years. Quality is improved."

**Mill L**—"Our quilled bobbins are 20% heavier than spun bobbins, and filling slubs are 50% fewer. The cost saving for doffing and battery filling offsets the quilling cost, and the saving in burling cost will soon amortize the cost of the machine."

**Mill N**—"The quiller increased the weight of yarn on our packages at least 39% and improved the yarn quality. Slubs and gouts have been practically eliminated."

### High-Draft Systems Call For New Cleaning Schedules

Opinion was divided as to whether the newer high-draft systems for spinning require more or less cleaning. All agreed that additional weight is needed for top rolls. Consensus was that high-draft systems generally produce fewer ends down. Reports are:

**Mill C**—"We do not yet know what the roll-cleaning frequency will be on our new Duo-Roth drafting, but it was once every six months on the Roth system. Ends down decreased when the new drafting was installed. We have increased top-roll weights on 21.5s warp from 42 to 68 lbs. For 46s filling, weights were increased from 42 to 52 lbs."

**Mill D**—"We did not increase top-roll cleaning. Our schedule for scrubbing steel rolls went from six to eight months. Weight on the top rolls was increased 25%."

**Mill H**—"Rolls are now scrubbed once a year. Weight was increased from 48 to 68 lbs."

**Mill L**—"Our rolls, which formerly were scoured every eight months, are now scoured every five months. Ends down are about the same. Front-roll speed was increased from 120 to 130 rpm., and 30% more weight was added to the top rolls."

**Mill M**—"With the new high-draft spinning, we had to increase our roll-cleaning frequency. Ends down are about the same. Weight on the top roll was increased from 40 to 72 lbs."

**Mill N**—"We have not increased our cleaning schedule, which is as follows: top rolls, pencil rolls, and revolving clearers are cleaned once a week; steel rolls are scrubbed once every six months. We have had a decrease in ends down and have not added any additional top-roll weight."

**Mill N-1**—"Top-roll cleaning was reduced from once every 72 hrs. to once every 120 hrs. In some instances, the interval is 144 hrs. We clean and scrub rolls every six months. Ends down were reduced 25 to 30%."

**Mill S**—"We reduced our cleaning schedule from six to three months and increased top-roll weight 30%."

**Mill W**—"No increased cleaning was necessary, and no additional weights were added."

### Traveler Cleaners Are Adjusted

Twenty mills gave their experiences in adjusting traveler cleaners. Most of the mills use a pin-type cleaner, which they check and adjust when yarn numbers are changed or when the frames are overhauled. Reports:

**Mill G**—"We use a pin-type traveler cleaner back of the ring holder; the only time we change the setting is when we change to a different-circle traveler that is wide enough to hit the traveler cleaner. We check traveler cleaners when the frame is overhauled."

**Mill I**—"Our traveler cleaners are adjusted when the frame is overhauled every 48 weeks or when it is scoured every 24 weeks. We use the wire-type cleaner made on the ring holder. The setting is not changed when the yarn number is changed."

**Mill M**—"We use a pin-type cleaner and adjust it by using a special tool made from a piece of small pipe. This tool is slipped over the traveler cleaner, and the cleaner is bent slightly toward the ring. The tool is made so that the traveler clears the pin by 0.020 in. The same setting is used for all of our yarn numbers, since the same-size traveler is used."

### Cleaners Are Set With a Gauge

**Mill O**—"Traveler cleaners are set with a gauge once a year by the overhaulers. If yarn numbers are changed, section men adjust the settings. We use pin-type cleaners."

**Mill Q**—"Our section men keep traveler cleaners set properly. Cleaners fit under the ring-plate screw and curve backward. We have gauges that fit between the cleaner and the ring for each traveler number."

**Mill W**—"We check our traveler cleaners on three frames each day and correct the settings if necessary. In addition, we set our cleaners about once a year when the spindles are plumbed."

**Mill Z**—"Approximately one-third of our frames have metal plate holders, and two-thirds have cast-iron holders with pin-type cleaners. These cleaners are checked annually when the spindles are plumbed. The settings are not changed even though the yarn number may be changed greatly."

### More Weights, More Buffing

The 14 mills reporting on top-roll maintenance were divided as to whether additional weight on top rolls calls for more buffing, but most of them think that additional buffing is needed. Reports are:

**Mill D**—"We buff more often. Our schedule is every three months for rolls producing 15s warp. Front-roll speed is 180 rpm., and draft is 27.72."

**Mill H**—"We buff more often. Our buffing schedule is three months for front rolls and nine months for back rolls. Yarn numbers range from 14s to 43s, and average draft is 27. Front-roll speed is 208 rpm. for 14s and 110 rpm. for 43s."

**Mill W**—"Rolls are not buffed more often. We buff every six months when the rolls are scrubbed. Numbers range from 6.50s to 20s for cotton and 3.50s to 20s for rayon. Drafts vary from 5 to 20, and front-roll speeds are 120 to 205 rpm."

**Mill N-1**—"We buff rolls when they need it and have not yet established a regular schedule."

### Traveling Cleaners Save Labor

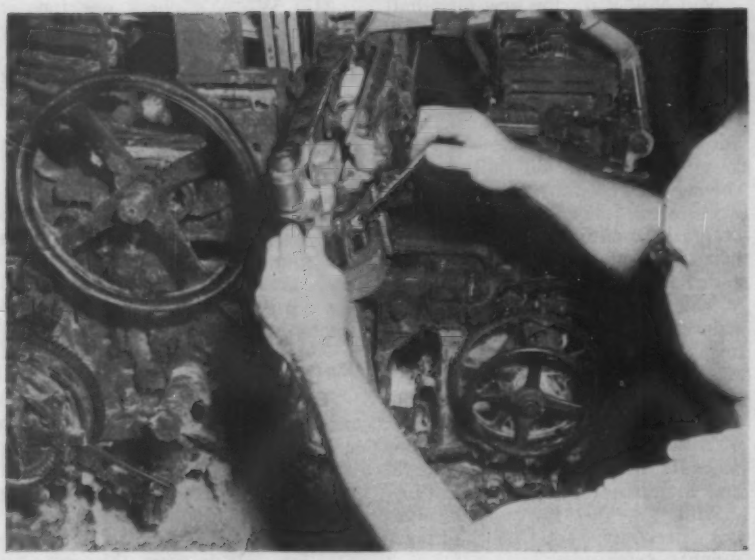
The installation of traveling frame cleaners substantially cut manual cleaning in nine mills. The majority reported that slubs and gouts are reduced and that travelers do not

CONTINUED ON PAGE 172

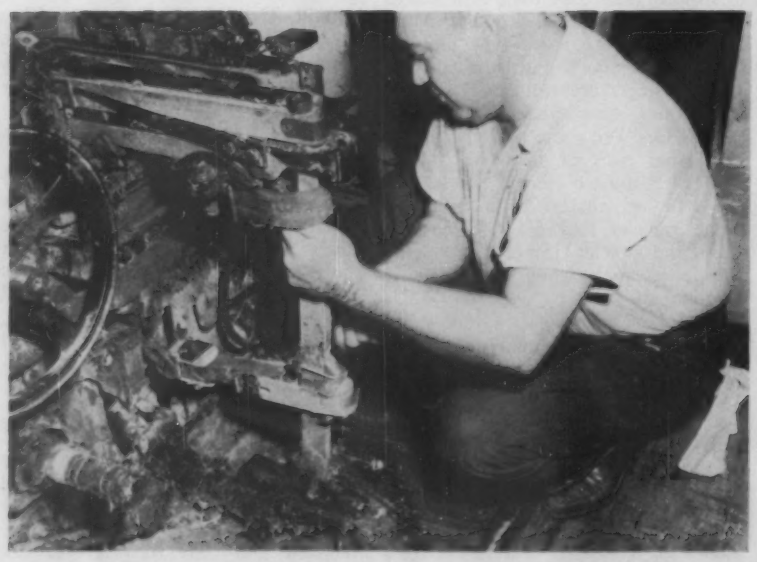
# This Mill Reduces Costs By Using ENDLESS CHECKSTRAPS

**After much time spent testing and experimenting, one mill decided to use multiple endless checkstraps on its X-2 looms. Results are—**

- **Lower checkstrap costs**
- **Less machine downtime**
- **More-efficient operation**



PLUG in the lay end can be removed when endless checkstraps are changed.



LUG must be loosened to slip the picker stick from the lay.

WITH ITS METHOD OF INSTALLATION, adjustments, and maintenance, a large Southern mill is getting more than 9,000 hrs. service life from its multiple endless checkstraps. Not only has checkstrap cost been reduced, but there has also been a decrease in machine downtime and labor costs for checkstrap replacement and maintenance.

The endless multiple checkstraps were first used on 600 new X-2 looms. They were tried on some E-model looms but did not perform as satisfactorily on these looms as they did on the higher speed X-2. It was also harder to install the endless straps on E-models.

It is necessary to remove the long lug and either take the picker stick out of the parallel foot or remove the entire parallel assembly to remove or replace an endless checkstrap on an E-model loom.

### Straps Are Easy To Change on X-2s

The X-2 looms have a removable plug in the end of the lay that can be taken out to change endless checkstraps. However, it is still necessary to loosen the lug so the picker stick can be pulled out of the slot of the lay.

Changing an endless checkstrap on these X-2 looms does not take any more time or effort than required to change a conventional slotted strap. And these endless straps are changed less frequently.

It is best to change all four straps when one breaks. The straps that are still serviceable can be matched with others and placed on a loom together. However, some loomfixers claim that putting a new strap in the top position equalizes the set and gives good results.

### Checkstraps Are Rotated Regularly

Since the top strap travels the greater distance, it receives the most wear. The other straps wear in proportion to their position, with the bottom strap wearing the least of the four.

CHECKSTRAPS are removed and replaced over the top of the picker stick.

PICKER STICK is put back in the lay slot, and the plug and lug are replaced.

The loomfixers were taught to rotate the position of the checkstraps on their looms to make them all wear evenly.

Each loomfixer is assigned a third of the looms on his section on which to turn and rotate the checkstraps, and for other maintenance work.

Turning the straps in the brackets periodically has been found helpful in prolonging the useful life of the checkstraps.

A number of different makes and kinds of endless checkstraps were used in the mill before the presently used type of strap was chosen. The endless straps must be adjusted evenly, both front and back. Movable fingers on the checkstrap brackets are used for adjustment.

It took some time for the loomfixers to learn just how to adjust these fingers for best results. Most trouble with the endless straps developed on Mondays following the weekend shutdown and under extremely humid conditions. The straps had a tendency to stick on one side and turn in the bracket, causing the loom to slam.

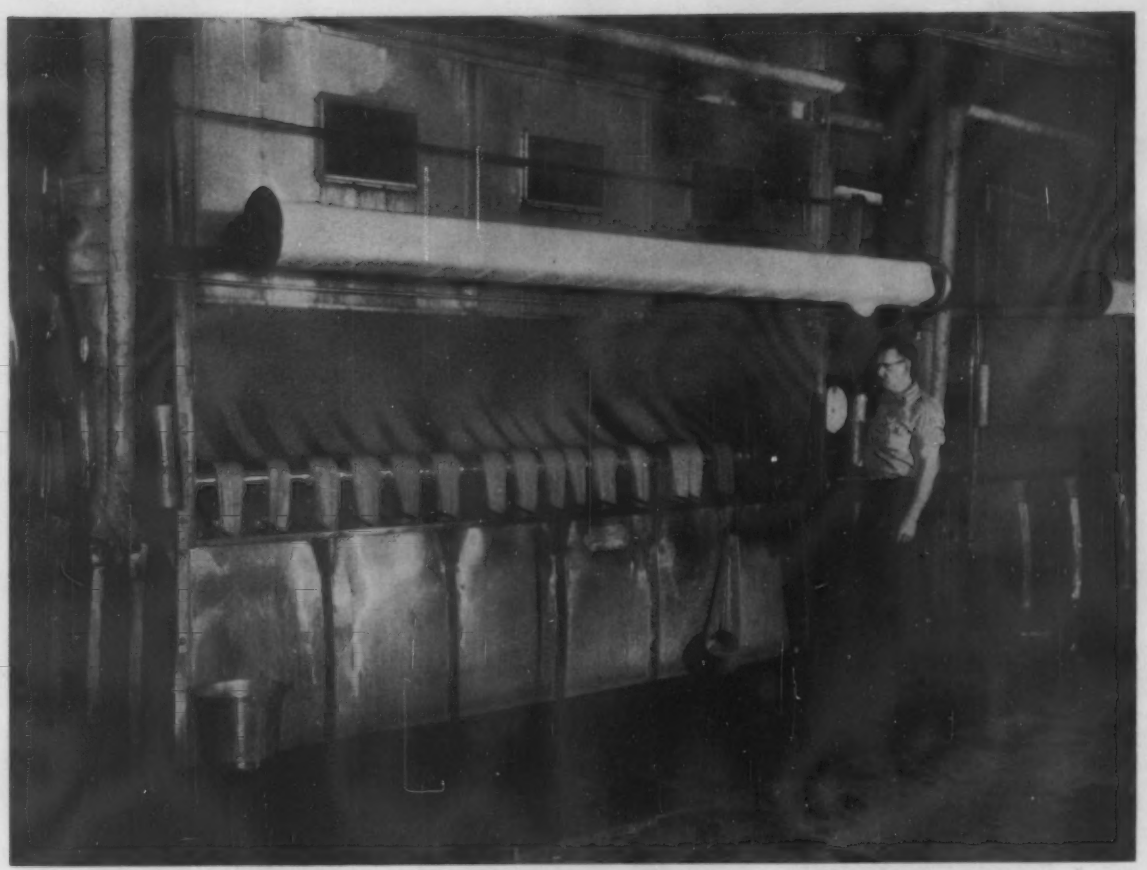
After the multiple endless checkstraps became standard equipment and the loomfixers learned how to adjust them, there was no more Monday morning trouble.

This mill let its loomfixers choose the kind of strap they would use. Although some of them didn't like the multiple endless strap at first, they have all chosen it now that it has proved its worth. Not only do the loomfixers spend less time changing and adjusting checkstraps, but they can also operate their sections at less cost since checkstraps are a major item of loom supplies.

The multiple endless checkstraps are being used in the mill on looms of 44-in. width operating at 172 ppm.

CHECK FINGER is adjusted at the front of the lay.

FRICTION must be applied to the back and front equally.



MODERN BECKS made of stainless steel and equipped with temperature controls are used to dye circular-knit fabrics.

# How American & Efird Dyes ACRILAN and WOOL-ORLON Blends

**At Mt. Holly, N. C., the Finishing Div. of American & Efird Mills, Inc., handles a varied line of circular-knit goods made from Acrilan and blends of wool and Orlon. Success in handling these fabrics depends on—**

- **Choosing the right dyes**
- **Avoiding harsh chemical or mechanical treatment**

MOVING ALONG WITH THE TREND toward the greater use of synthetic fibers in men's and women's knitted outerwear, the Finishing Div. of American & Efird Mills, Inc., is handling a constantly increasing volume of Acrilan, Orlon, and blends of these fibers with wool.

The starting point for Acrilan goods is to load them in becks and give them a light scour with a synthetic detergent for 20 to 30 mins. at 160 to 180° F. The bath is cooled slowly with cold water to avoid setting any creases that may have developed and is then dropped.

The depth of shade, its brilliance, and fastness requirements are taken into account in selecting the dyes to be used.

Acrilan accepts a number of types of dyes readily, and for many requirements disperse dyes are satisfactory.

A fresh bath is set at 120° F.; and if disperse dyes are to be used, ½ to 1% owg. of a good dispersing agent is added and the load is run until the bath is thoroughly mixed.

The required amount of dye is first carefully dispersed with hot water and a dispersing agent in a pail and then added across the width of the beck. The temperature of the bath is

brought up to 200° F. in 30 mins. and maintained at this point.

When the shade is matched, the bath is cooled gradually to 130 to 140° F. and then dropped. The goods are given a good rinse, and they are unloaded into boxes for extraction and drying.

### How Acid Dyes Are Used

When it is necessary to use acid dyes, the dyebath is set with sodium acetate and a retarding agent. The acid colors are added at 110 to 120° F., and the load is brought to 200° F. within 30 mins. Acid dyes require a temperature of 205° F. or better to get good results; but their rate of strike is fast at the high temperature, and they require a retarding agent to produce level results. If additional color is required, the bath is let cool to 170° F. before the add is made and then brought back to dyeing temperature.

The slow-cooling procedure is followed after dyeing is complete to avoid setting creases in the goods. A final rinse completes the process.

For wool-Orlon blends, the goods are prepared with a nonionic detergent in the scour; and if acid colors are to be used on the wool, sodium acetate is added and then the dyestuff. The bath is brought to the boil and run to exhaustion, and acetic acid is added toward the end of the run. At first the Orlon will stain, but at the boil the color gradually transfers back to the wool.

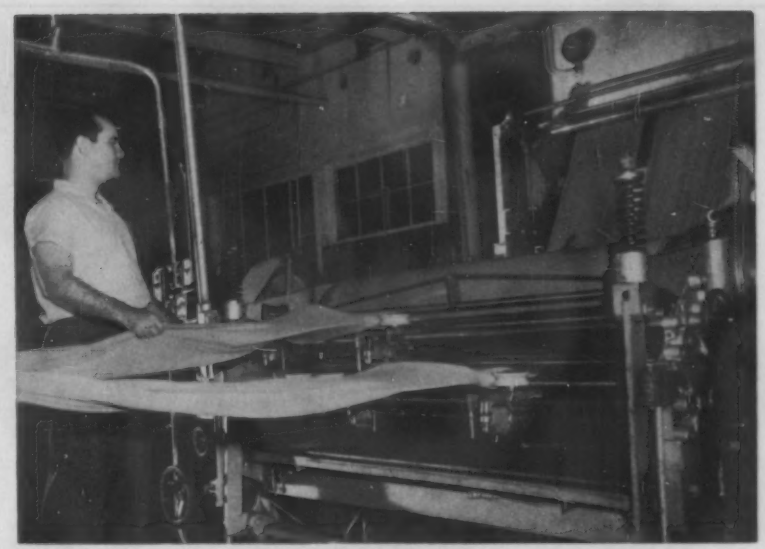
### How Cationic Dyes Are Run

If cationic dyes are to be used for the Orlon in a wool-Orlon blend, the dyebath is let cool and a retarder added; then the cationic dyes are run in. The temperature is raised again to the boil and the load let run 1½ hrs. to reduce the staining effect of the cationic dyes on the wool.

In some cases, simultaneous dyeing of the wool and Orlon can be done, but American & Efird prefers the two-step process for most work. A complete fresh bath is necessary if the wool dyes have not been well exhausted. If disperse colors are used on the Orlon component, a fresh bath is a must.

An important factor in producing level shades with all the fastness possible with the dyes used is control of dyebath pH. Some combinations of acid dyes and the cationic colors require a neutral bath or a slightly acid bath. Others require a pH of 4 to 5.5 in order to remain in solution and to exhaust properly.

The addition of a nonionic leveling agent to the dyebath helps prevent precipitation, but it is most important to avoid mixing dyes that are not completely compatible.



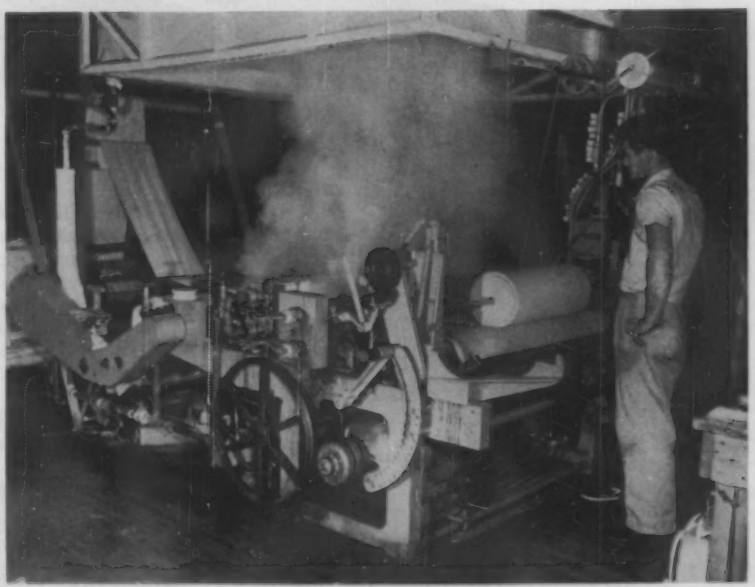
**PAD-AND-DRYER RANGE provides the controlled tension necessary to produce satisfactory knitted fabrics. For most styles, finishing material is applied in the becks.**

The Acrilan, Acrilan-wool, and Orlon-wool fabrics generally require only a slight amount of finishing materials to produce an acceptable hand. Cationic finishes that give a smooth, soft hand are added in the final rinse before the goods are taken from the becks. For some requirements, a slightly harsher worsted-type hand can be produced by adding resins to the formula.

A preliminary step to finishing the Acrilan or wool-Orlon fabrics is to pull the extracted goods over a spreader and into a calender with plenty of steam. The warm, damp goods are rolled up on the calender and let stand for 2 to 3 hrs. This treatment effectively removes any traces of cracks or crow's-feet that might have been formed in dyeing.

After this layover period, the goods are dried in a Tube-tex range under controlled tension.

A pad preceding the dryer may be used to apply finishing oils or resins as needed. A final calendering to width completes the finishing process.



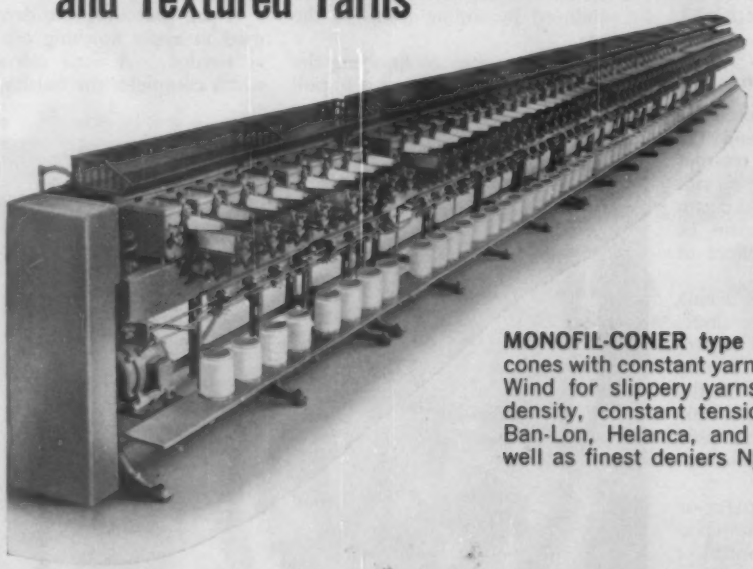
**PLENTY OF STEAM applied to the fabric as it passes over a spreader helps produce dimensional stability and increases the effect of the calender nip on the fabric surface.**

# VARIO CONER for Knitting Yarns

VARIO CONE, Cross Wound with Progressive Conicity

**VARIO CONER type KM 5/7** for winding spun yarns onto knitting cones of uniform density — automatic stop motion for entanglement in the skein — patented gear driven dry waxing device — silent — designed to wind the "difficult" yarns, orlons, cashmeres, boucles, ratines, wool, worsteds, etc.

# MONOFIL-CONER for Mono filament Nylon, Ban-Lon, and Textured Yarns



PINEAPPLE CONE with tapered ends

**MONOFIL-CONER type KEK-PN** winds pineapple cones with constant yarn speed — special "Penta" Wind for slippery yarns, soft packages, uniform density, constant tension, uniform oiling, winds Ban-Lon, Helanca, and other Textured Yarns as well as finest deniers Nylon, Orlon, etc.

Sole Agent for United States and Canada:

H. J. Theiler Corporation
Whitinsville/Mass. USA.

**SCHWEITER LTD.**
HORGEN (Zurich) SWITZERLAND



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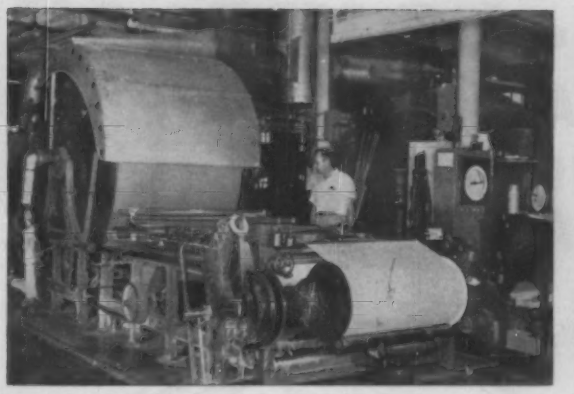


INSTRUMENT CONTROLS make precision slashing easy for the slasher tender. During operation, his only job is observation.

ELECTRIC HOIST takes the strain out of doffing warps. On given styles of cloth, warps are leased at every loom beam.

# To SLASH WIDE SHEETING — Watch Warp-Yarn Stretch

**Proper controls in slashing are resulting in consistently well-slashed warps at a mill that weaves only wide sheeting and pillowcase goods. The warps are slashed with—**

- **Less than 1% stretch**
- **Size content of 11½%**
- **Moisture content of 7½%**

CONTROLLING THE STRETCH OF YARN is one of the most important phases of slashing at a medium-sized mill that weaves only wide sheeting and pillowcase goods. The total warp stretch is held at less than 1%.

Warps slashed with this stretch factor run well in weaving, where production is 92% and second-quality cloth is 1¼%.

Two slashers at the mill slash all warps for 643 looms. The slashers, which are remodeled Saco-Lowell machines, have two cylinders. All cylinders are copper-alloy coated. They are 5 and 7 ft. in diameter.

Yarn numbers slashed are 20s to 30s. Slasher speed is 42 yds. per min.

The percentage of size left in the warps is 11½%, and the size content is checked with an acid test.

Moisture controls keep the moisture content at 7½ to 8%.

All squeeze rolls are covered with wool blankets. Pressure is 75 to 150 psi. and is regulated with a Norcross pressure regulator.

Six to 13 section beams are run in the creel, but more often nine beams are run. The ends per section beam vary from 336 to 450.

Yards per section beam range from 20,000 to 30,000. Section-beam creels are 26 ins. in diameter.

The creels have antifriction bearings for the section beams; and the beams are tensioned with cords, which pull against live weights.

Every new set is counted in at the slasher. On certain styles, warps are leased at every loom beam. On other styles, they're leased only at every two or three loom beams.

Loom beams are 20 ins. in diameter. For a fabric that's woven up to 64 ins. wide at the loom, a single beam is slashed. For fabrics to be woven over 64 ins. wide, two beams are slashed and two beams are used at the loom.

### Pneumatic Pressure Roll Is Used

A 64-in. warp usually contains 4,300 warp ends. For split beams at the loom, 2,800 to 3,555 ends are placed on each beam. A pneumatic pressure roll at the slasher packs the yarn on the loom beam at high density.

Although the basic slashers have not been remodeled greatly, several instruments have been added for close control. The instruments include size-level control, temperature control, and squeeze-roll pressure regulators.

All size-preparation equipment is completely new. The equipment is a Manton-Gaulin homogenizer; a 250-gal. stainless-steel cooking kettle, and three 290-gal. stainless-steel storage kettles, all made by Textile Shops.

Section beams and loom beams are loaded and unloaded with electric hoists on monorails.

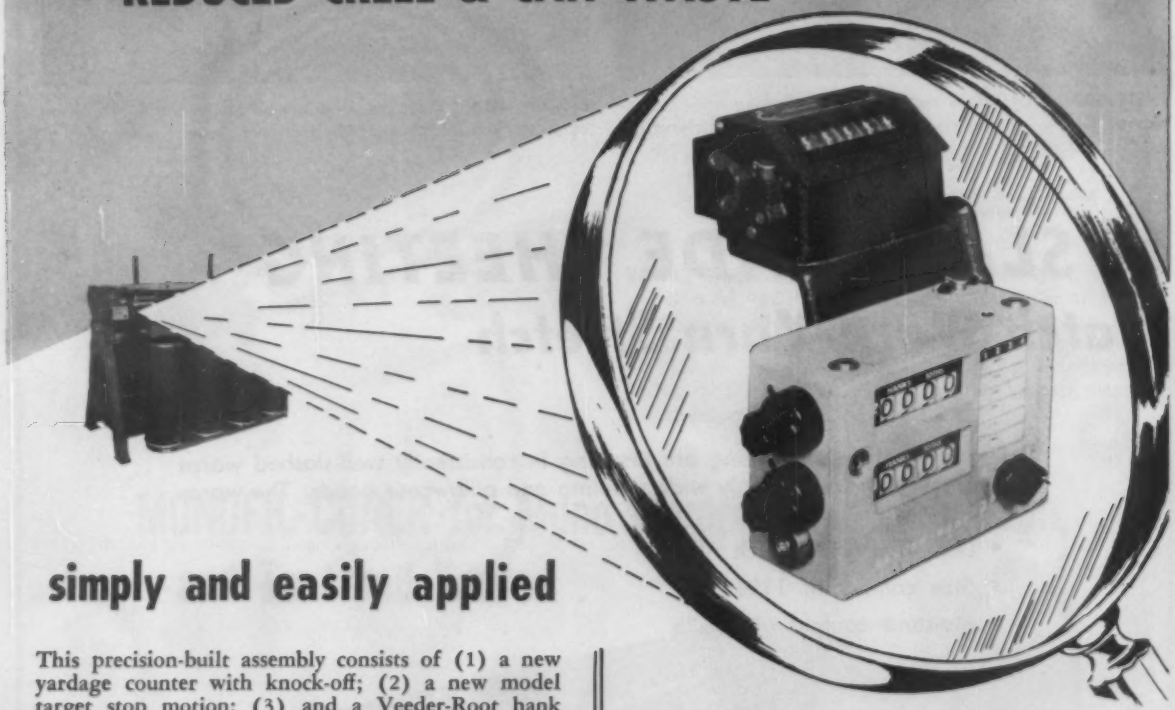
A size formula that gives good results on Type-140 sheeting, 68x72 construction, is:

236 lbs. of corn starch
15 lbs. of size compound
1 lb. of binder
259 gals. of water

The size finishes at 325 gals. It is held at 190 to 200° F. in the size box.

# *NEW* SACO-LOWELL
## PREDETERMINED YARDAGE COUNTERS
### for drawing frames

- FOR EXACT SLIVER YARDAGE CONTROL
- REDUCED CREEL & CAN WASTE

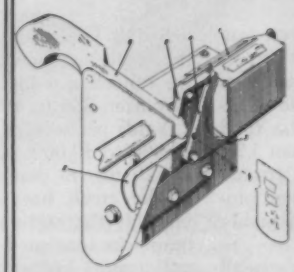


## simply and easily applied

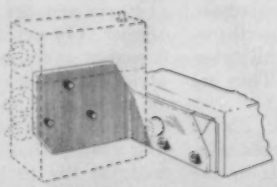
This precision-built assembly consists of (1) a new yardage counter with knock-off; (2) a new model target stop motion; (3) and a Veeder-Root hank clock with horizontal drive shaft.

Available for one, two, three shift operations, the new Yardage Counter is easily installed on all conventional Saco-Lowell drawing frames. The unit contains fewer moving parts and is the most accurate of its type available today. New Saco-Lowell Predetermined Yardage Counters are designed for mills desiring precisely controlled doffing cycles to eliminate piecings.

New and improved methods of controlling waste cut operating costs. These new Saco-Lowell Predetermined Yardage Counters are another step to increased spinning room efficiency and production. The relatively small investment for this new assembly is soon paid for by the elimination of needless and costly creel & can waste.



**Predetermined Yardage Counter (1), as seen from the rear, stops the drawing frame by means of its standard knock-off lever (2), through a preset trip lever (3), and two small knock-off levers (4 and 5) on the new target stop motion. Weighted doff signal (6) is released when trip lever (3) rises. Unbalanced drawing frame knock-off lever (2) is simultaneously released, and its other end engages the striker dog at the back of the beam to stop the machine.**



**Hank Clock Bracket (3D2671) — for use on lap-back drawing frames — fits on the fast-end roll stand, which has an opening in it so that the hand clock can be coupled directly to the back calender roll shaft. Three hex cap screws and lock washers secure the clock to the bracket from the rear.**

# SACO-LOWELL-SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA



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# A Simplified Approach to Job Methods

• Foremen in mills without methods departments often find job methods a real problem. They are expected to establish efficient methods, but they usually lack either knowledge of methods study or time to apply what they do know.

• For anyone in that dilemma, here is a checklist of things to look for that can help you, with a minimum of time spent, establish efficient methods.

By **JAMES E. GARDNER,** Assistant Director, Personnel Research, Fieldcrest Mills, Inc.

Foremen are often in a dilemma concerning job methods.

They are expected to establish methods that are efficient and, as a basis for determination of pay rates, will have some measure of permanence. That is, the methods must at least approach the irreducible minimum of motions. Otherwise they are neither efficient nor do they provide any long-term assurance against unauthorized short-cuts that will unbalance the rate structure. Most foremen are familiar enough with the difficulties accompanying the establishment of a precise rate on an imprecise job method.

The foreman who has a methods department at his call to help him with the establishment of job methods is indeed fortunate. Many foremen are pretty largely left to their own devices, however. The problem in their case is twofold:

1. **To know enough about methods study** to apply effective techniques to their own operations

2. **To find enough time** to make such application

Unhappily, a lack of knowledge or time is not likely to absolve the foreman of his responsibility for job methods. The obvious solution for the foreman, though by no means an easy one, is to acquire enough motion-study knowledge and skill and to find enough time to carry out the responsibility.

How much is "enough" knowledge and skill? While a foreman could become a finished expert in motion study, provided he had time and opportunity for the required training, it is doubtful that he could find time on the job to put the full training to use.

He can find time for some amount of methods work but not enough time, in the usual case, for a minute breakdown of job tasks into therbligs or Methods-Time Measurement units, the development of simo-motion charts, and the use of other formal techniques required for a comprehensive, professional analysis of methods.

The objectives, then, must be to develop enough skill and knowledge in methods work to establish efficient methods within the practical limitations of the time a foreman is able to devote to this activity. He will not be able to give a professional's time to the subject. Fortunately, he need not have professional competence.

It is the major intent of this article to suggest that a foreman can do an acceptable methods job (though not the best possible) through the exercise of an analytic skill—far short of expertness—which can be acquired in relatively short order.

The basis for this analytic skill is a recognition, by observation, of inefficiencies in method and a concentration upon the elimination of these inefficiencies in the improvement of job methods.

Here is a list of such inefficiencies (which can be spotted by the foreman's observation) and related cures.

**One hand idle.** This condition is obvious; simultaneous motions of both hands are more efficient if practical.

**Hold.** One hand in this case controls an object by holding it. The control can usually be achieved in a less expensive way with a holding device that frees the hand for actual work on the object.

**Difficult combination of motions.** It is easy to make simple reaches or simple moves with both hands at the same time. However, some combinations of motions (such as positionings to a tight fit or moves to an exact location) are difficult to perform and should not be required as simultaneous motions. The ideal combination is the same simple motion with both hands but in opposed directions.

**Balancing delay.** In this case both hands are in action but one completes its motion before the other, and a "balancing delay" is forced upon the first. If it is not practical to have both hands do the same thing, they should be in motion for about the same length of time.

**Long reaches.** Reaches or moves made frequently should involve the fingers and forearms only. Inefficiencies

CONTINUED ON PAGE 117

*One phase of Conveyor System at Grace Bleachery, Springs Cotton Mills. Inclined belt conveyors from 6 separate packing stations feed to a single conveyor leading to the warehouse.*

# How ALVEY Solved the Case-Handling Problem

Grace Bleachery faced a tough problem in textile production: How to cut materials handling costs and get better flow of production using a minimum of floor space. The solution: they installed a well-planned, completely integrated Alvey Conveyor System. This modern handling system collects the output of the 6 packing stations—automatically carries the cartons through weighing, sealing, checking, and delivers them to the warehouse. All this is done on overhead conveyors without using valuable floor space.

Find out how you can slash manhandling costs, speed mill flow, and widen your profit margin! Call in an experienced Alvey Engineer. He'll be happy to analyze your individual problem . . . at no obligation to you!

**ALVEY**

ALV-293

ENGINEERED CONVEYOR SYSTEMS

ALVEY CONVEYOR MANUFACTURING COMPANY • 9305 OLIVE STREET ROAD • ST. LOUIS 24, MO.

*Branch Offices in Principal Cities*



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## POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 115

occur when motions require the use of the shoulders or trunk; such motions should be eliminated or minimized.

**Change in direction.** This occurs as part of a reach or move. It adds time to the reach or move because the hand slows down as it approaches the direction change and has to speed up again. In most cases where change in direction occurs there is an obstacle in the way of a straight motion. Sometimes the obstacle can be removed or shifted so as to shorten the motion path.

**Search or select.** Search refers to the location of objects; select refers to the choosing among several objects at the end of search. It is hard to tell when one ends and the other begins. In any event they add time to the motions of reach and grasp.

They can be avoided by keeping supplies at the work-place separated and in a constant position so there is no real reason for searching and making a selection and for excessive slowing down at the completion of the reach. And the supply of items should be so arranged as to minimize the difficulty of grasping.

**Pre-positioning (preparation for positioning) and positioning exactly.** These are time-consuming motions usually requiring turns, regrasps, and visual perception. The cure is to provide a guide or stop where possible.

By a simple breakdown of the job into elements, observational analysis of the elements for detection of inefficiencies through the use of the above checklist of inefficiencies, and before-after timing of elements, a foreman can improve job methods without a prohibitive expenditure of time.

This technique is not the most fruitful possible, and it does not cover all aspects of methods work (for example, the employees are a good source of ideas for improvement). But it provides the foreman with a way of looking at his job methods that is insightful and within his time budget. It directs and organizes his observations.

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## SPRINGS' 14 NEW SLASHERS

CONTINUED FROM PAGE 73

used, which at present averages about 8,500 lbs. per 8-hr. shift.

### Size Viscosity Is Constant

Generally, only three size formulas are used. Taylor instruments control size cooking and storage. Norcross viscometers hold size viscosity constant.

The slashers are driven by General Electric Amplidyne drives. Controls for the drives are in the basement under the slasher room.

Two electricians from the mill's maintenance department keep the drives and controls working correctly. These two electricians were trained to maintain the drives, and no other employees touch them.

Inspection and preventive maintenance have eliminated slasher stops for drive maintenance. The two electricians inspect the drives and controls the first thing each morning. They also inspect all slasher instruments such as size-box-level, moisture-content, and size-cooking controls.

### Maintenance Prevents Breakdowns

Preventive maintenance of the drives includes: periodic checks throughout the cabinets to clean them, checks of brushes for seating, and checks of commutators.

The two electricians are on 24-hr. call, but the drives give so little trouble they seldom have to return to the plant.

The complete slasher room denotes modern engineering efficiency and physical cleanliness. But Springs' production supervisors expect improvements of slashing methods to result in still higher slasher speed and better-slashed warps.

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## INDIAN HEAD MILLS

CONTINUED FROM PAGE 84

hand but are pressed on the conveyor that carries them through labeling and packaging.

### Consumer Packaging Featured

Although Indian Head produces a utility package of 1 doz. sheets tied and wrapped into bundles for institutions, government contracts, and the like, a large proportion of the plant's production goes into polyethylene bags stamped with the Pequot 180 brand name for the best-quality combed percales. Pequot 140 designates the muslin sheets.

Units per package have a direct effect on sales—often the customer will buy a package of two sheets as readily as one that contains only one sheet—so Indian Head packs the staple item, white sheets, two to a bag.

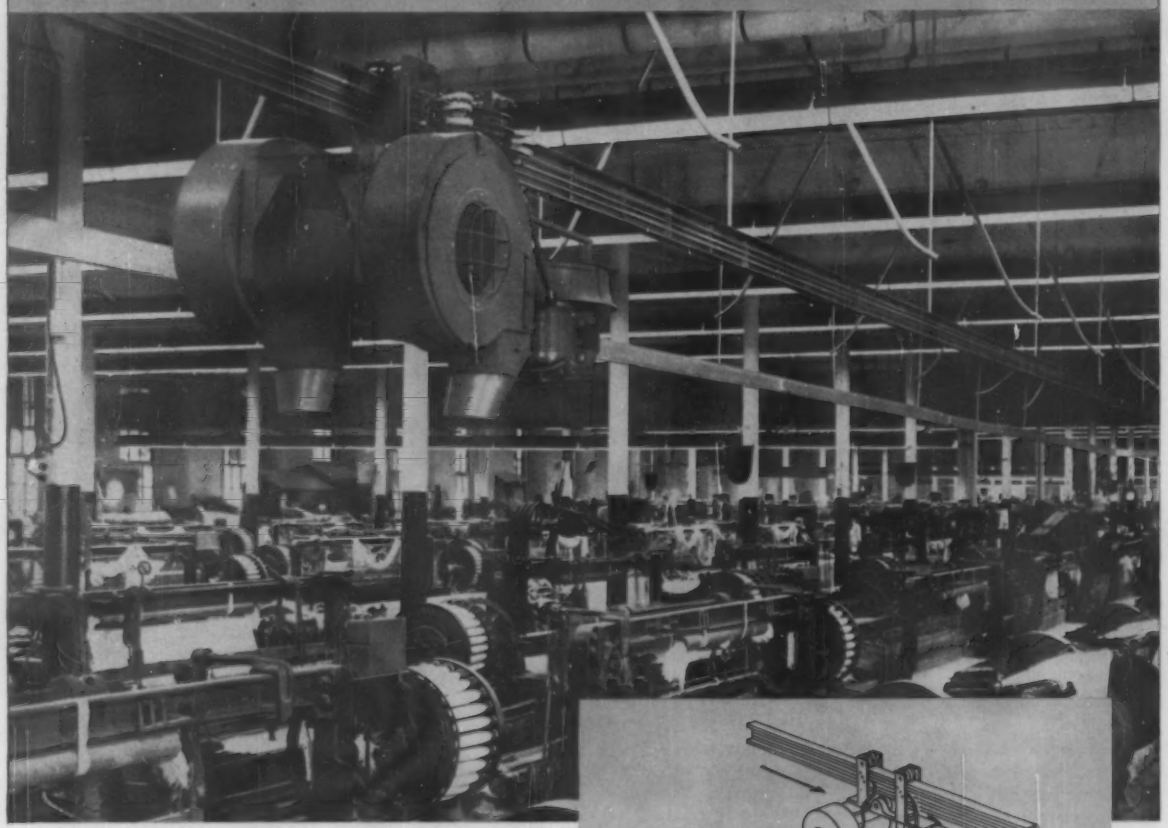
Fitted sheets, peppermint stripes, and dyed sheets are generally packed one to a bag. All other sheets and pillowcases are packed two to a bag.

Shipping cases that go to department stores carry 5 doz. white sheets or 12 doz. white pillowcases. Colored sheets are put up in cartons of 1 doz.; colored pillowcases are packed 4 doz. to the carton.

In season, special gift sets of sheets and pillowcases are put up in attractive packages that make glamour goods out of household necessities to incite gift buying in multiple-unit packages.

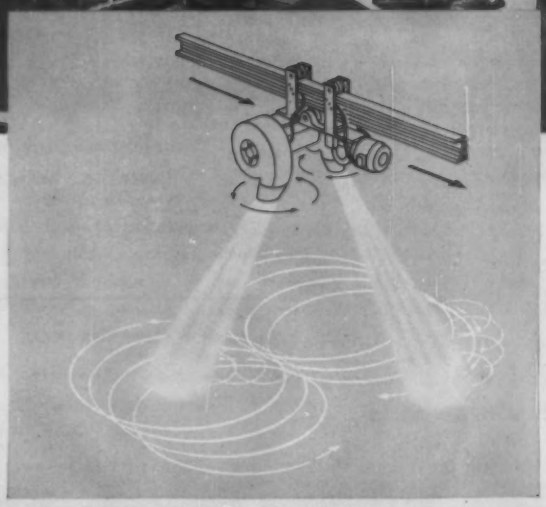
*Amco Introduces it's New*

# Heliclone Loom Cleaner



Provides automatic, continuous cleaning of looms and ceiling • Drastically cuts cleaning costs • Steps up production • Improves quality of fabric • Reduces fire hazard • Improves weave room appearance • Boosts employee morale • Can be incorporated with beam handling equipment.

Write for further information, or ask to have an Amco engineer call.



Swiftly whirling outlet nozzles, driven by the air stream, direct the air jets at an acute angle in overlapping, circular paths. The result is a rapid series of high-velocity bursts of air over loom and warp surfaces for complete cleaning action.

**AMERICAN MOISTENING COMPANY** *Air Conditioning Systems and Textile Mill Equipment*

**Executive Offices: Cleveland, N. C.** Branches in Atlanta, Boston, Camden, Providence, Toronto

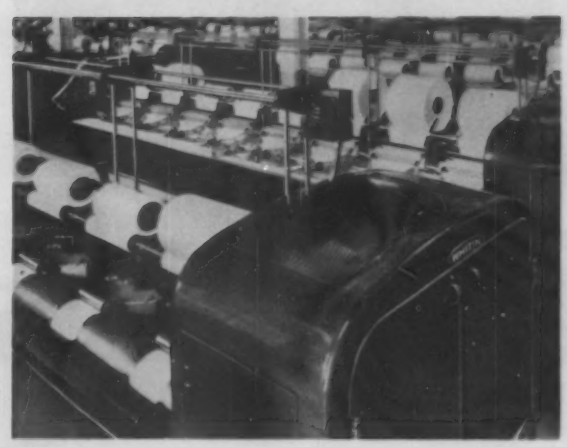
## Cotton Comber

The Super J comber, which has a maximum production of 50 lbs. per hr. at 100% efficiency, has been announced by Whitin Machine Works, Whitinsville, Mass.

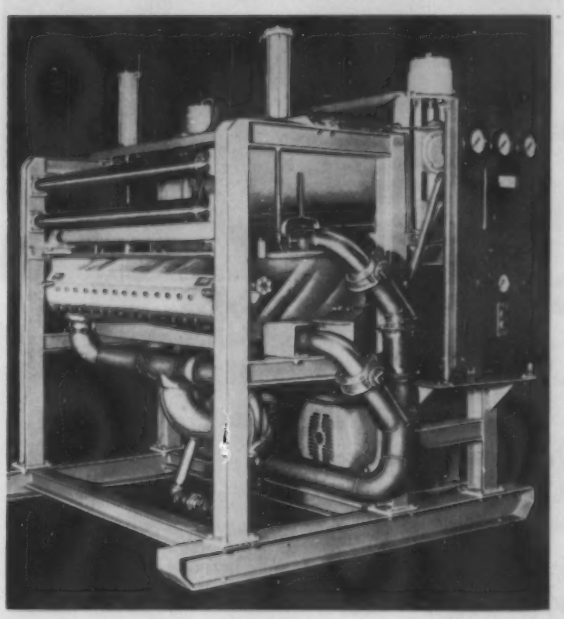
The machine, a successor to the Model J, has an improved nipper assembly, aluminum lap rolls, a lap-lock pawl that assures even feeding, a run-out lap-lock motion, and a two-light signal system.

The comber operates at 150 nips per minute and produces sliver with a low coefficient of variation. The fringe of the stock is fed during the backward motion of the nipper frame and is combed by 17 rows of needles in the half lap as the assembly moves forward. One complete cycle requires 0.40 sec.

Increased spring-weighting and larger detaching rolls permit heavier laps. The spring cushion plate has been redesigned to lead the fringe directly into the bite of the detaching roll.



Circle T-1 on Reader-Service Card



## Continuous-Dyeing Machine

An improved version of the original Bond dyeing machine has been developed by The Textile Shops, Spartanburg, S. C.

The unit is constructed of 316 stainless steel and has been made more compact so that 54-in. fabric can be handled on a unit that occupies only 7x8½ ft. of floor space.

The entire continuous-dyeing operation can be handled by a series of five synchronized units.

In operation, dye or chemical solutions are forced through perforated plates between which the fabric passes. Pressure is equalized on both the face and back of the fabric, and there is a high rate of flow of the solution being used.

The machine has automatic liquor-level controls and temperature controls, as well as automatic pressure regulation of the nip rolls.

The machine operates with a low total volume of liquid and is easily cleaned between runs. It can be used for many wet-processing operations, including desizing, scouring, peroxide saturating, dye development, and finish application.

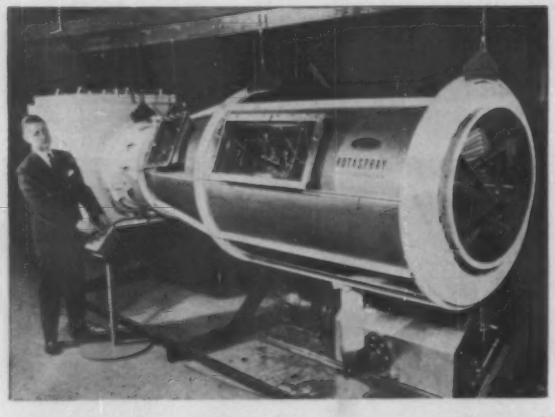
Circle T-2 on Reader-Service Card

## Filling-Fork Stop

The Harrison filling-fork stop is available from Louis P. Batson Co., Box 772, Greenville, S. C. The stop can be used on all looms that have a side filling fork.

The filling-fork stop is designed to let the fork swing free on each pick and help reduce jerk-ins, thin places, and broken picks. It will also prevent the filling from wrapping around the filling fork. The stop can be quickly and easily installed.

Circle T-3 on Reader-Service Card



## Air-Conditioning System

Development of a system for air conditioning large industrial areas has been announced by Carrier Corp., Syracuse 1, N. Y. The central-station conditioning apparatus takes only one-third the space of present equipment, provides more accurate control of humidity, and almost eliminates system cleaning and maintenance.

Using a rotating eliminator, the conditioner will handle a much greater volume of air than other Carrier Corp. units its size. A spin-dry principle removes water droplets, lint, and other foreign matter that are usually a problem in textile applications.

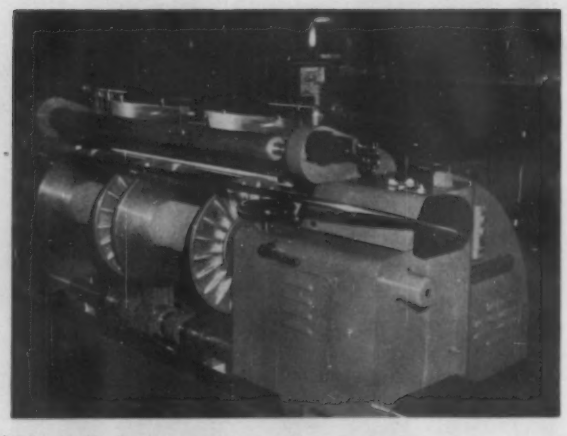
Circle T-4 on Reader-Service Card

## Tricot Warper

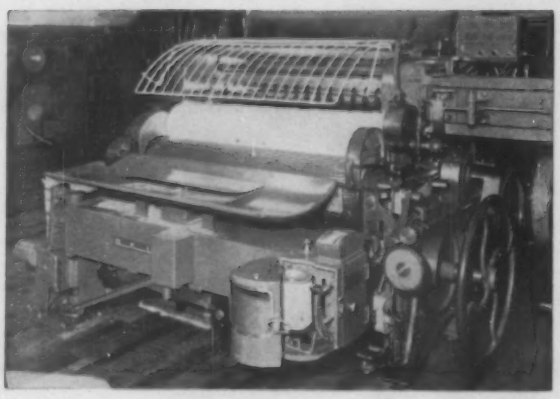
A multiple-beam tricot warper with 14- to 50-in. beam capacity has been announced by Cocker Machine & Foundry Co., Gastonia, N. C. Two 14- or 21-in. beams can be run simultaneously.

Change-over time for different beams is approximately 45 mins. A push-button system is used for doffing. The warper has pneumatically operated accumulation rolls, and it is backed electrically to reduce tension on the warp.

Other features include brakes on both sides of the spindles, air-operated presser rolls, accurate speed control without special attachments, and lubrication points on the front of the machine.



Circle T-5 on Reader-Service Card



## Automatic Lap Scale

A fully automatic picker-lap scale that plots the weight of each lap and corrects each picker for nonstandard lap weight has been introduced to North American cotton and synthetics-yarn mills by Edward S. Rudnick, Box 244, New Bedford, Mass. Manufacturer is Gifu Keiki Co. Ltd., Japan.

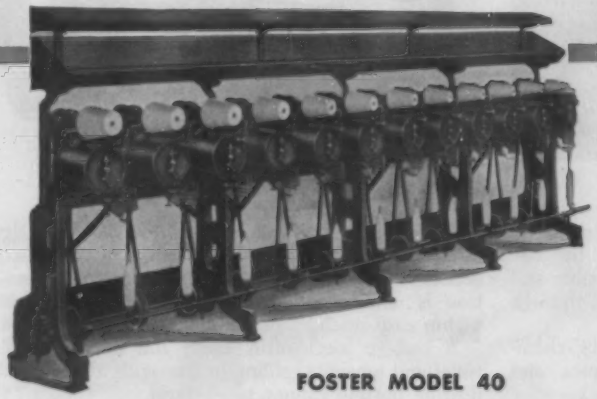
The scale, which can be attached to any make of picker, is pivoted to a hinged bracket at one side. To doff, the operator rolls the lap onto the scale pan.

Weight is indicated on a horizontal dial, and a pen plots the weight on a recorder drum that permits 160 readings on each chart. Lamps light up to indicate that the lap weight has been recorded and whether or not weight is correct. If the inner set of the adjustable limits (which can be preset to 0.1 lb.) is exceeded, a motor turns the weight handle to bring the lap back to standard.

Circle T-6 on Reader-Service Card

# HEAVY DUTY PRECISION WINDERS

FOSTER MODEL 77



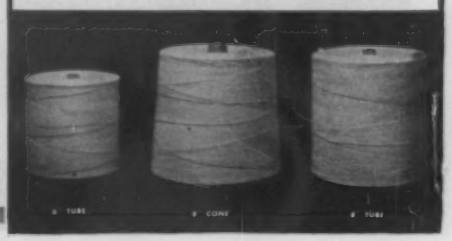
FOSTER MODEL 40

## *Champions at "Give and Take"*

A champion in any endeavor, sporting or manufacturing, is made by superior ability in "give and take". The Foster Model 77 and Model 40 precise winders for cones and tubes are champions in this respect. They have proved, in tough competition, their ability to give high production and superior packages in the winding of coarse yarns and heavy plies. They are also known for their ability to "take it", requiring minimum mechanical maintenance and repair.

**Check these champion characteristics of Foster Model 77 and Model 40:**

1. Precise wind or lay.
2. Ball bearing spindles and drive shaft standard on Model 77, optional on Model 40.
3. Spindles driven by individual quarter-turn belts.
4. Equipment for drawing either over-end or unrolling.
5. Arbors for various types of cones and tubes furnished for both machines.
6. Traverses on Model 77 up to 8"—on Model 40 up to 6½".
7. Multiple end winding of braider tubes on Model 40.
8. Model 77 winds a range of counts from 8/3 to 8/100; Model 40 from 30/2 to 8/40.



**FOSTER MACHINE CO.**

WESTFIELD, MASSACHUSETTS

Southern Office: Johnston Building, Charlotte, N. C.

Canadian Representative—Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.

European Representative: Muschamp Textile Machinery Ltd., Keb Lane—Bardsley, Oldham, England



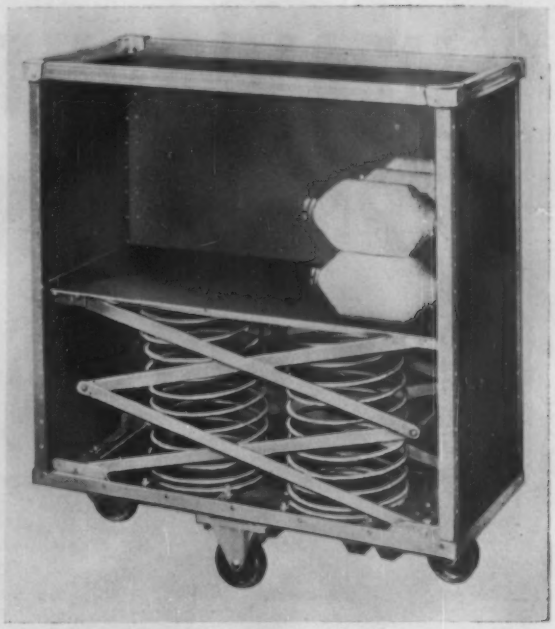
For more data, write this page number on Reader-Service card. →

## Testing Machine

A portable tester has been developed by American Instrument Co., Inc., Silver Spring, Md., to test the size and number of pores in various materials. The quality and performance of many materials can be determined through a port-structure analysis.

The tester can be used on metals, fuels, plastics, chemicals, textiles, leather, building materials, ceramics, and others.

**Circle T-7 on Reader-Service Card**



## Yarn Truck

A yarn truck with a floating bottom has been developed by Spaulding Fibre Co., Tonawanda, N. Y. The bottom depresses as the container is loaded and raises as the load is removed. Therefore the material is always kept within easy reach.

A linkage mechanism keeps the bottom level at all times and prevents spilling or damaging the contents. The floating bottom cannot trip or jam.

**Circle T-8 on Reader-Service Card**

## Test Chamber

An environmental test chamber has been announced by Fabric Research Laboratories, Inc., Dedham, Mass.

Designed to be used with all Instron machines except the table model, the test chamber can be set to produce temperatures of −98° F. to +700° F. Working space is adequate to accommodate most normal jaws and allows for testing 10-in. samples with up to 80% rupture extension.

**Circle T-9 on Reader-Service Card**

Tips are rounded to prevent damage to bobbins.

Worn tops rebuilt by exclusive "Specialloy" process, hardened and reground. Or new tops added by the Ideal "Fuze-Weld" process. Can be lengthened to produce larger packages.

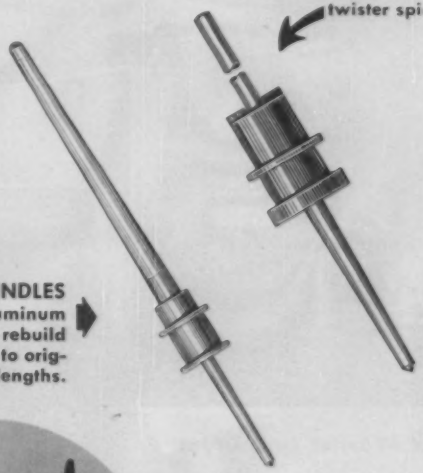
"Fuze-Weld" forms a perfect bond between new top and old blade.

Acorns rebuilt to assure positive grip and fit, and uniform height of bobbins. Can also be rebuilt to accommodate larger packages.

Whorls rebuilt or resized to produce uniform twist and count.

Worn bearing surfaces rebuilt with tough, oil-retaining "Specialloy": prevents running dry and gives longer wear.

Points precision finished ground to the correct degree of taper.



New drive lugs installed on twister spindles.

**ADAPTOR SPINDLES**
Ideal puts on aluminum adaptors and can rebuild bottom of blades to original or to new lengths.

# Ideal

## is headquarters for spindle savings

### spinning • twisting • throwing

Ideal *rebuilds* (not just regrinds or repairs) your worn spindles. Ideal rebuilt spindles give you new spindle efficiency and length of service at very substantial savings. All work is done to precision tolerances.

**Three Services**

**Rebuilt to original specifications.**

**Rebuilt to produce larger packages.**

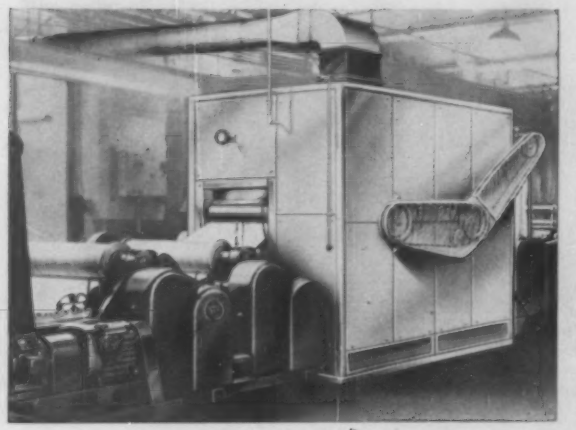
**New spindles of all types, manufactured to specifications.**

If your bobbins vibrate or weave, or are not all at the same height, they are causing poor lay and are wearing out bolsters and bobbins. Let an Ideal technical representative survey your frames and give you a price on your work without obligation.

# Ideal Machine Shops, Inc.

**Bessemer City, North Carolina**

**Continuous Service to Textile Mills Since 1925**



## Back Washer and Dryer

A newly engineered range consisting of a two-bowl back washer and a self-threading dryer has been announced by Prince-Smith & Stells Ltd., Keighley, England.

The range is built by Taylor, Wordsworth & Co. Ltd., of Leeds, an associate concern.

Features include roller bearings on all squeeze rolls. Pressure to the squeeze rolls is applied by a hydraulic system with its own automatic hydraulic pump. The drive for the back washers and dryer is through a hydraulic variable-speed mechanism.

The back washer is available in models suitable for short-staple French-combed tops or for tops from Noble combs.

Bowls are made of galvanized steel. Guide rolls are made of brass, but all working surfaces of the Mark III backwasher can be had in stainless steel if desired.

The Mark II dryer has two 54-in. perforated cylinders to which the sliver is held by hot air passing through the sliver toward the center of the cylinder. As the sliver passes through the dryer, the inside face that contacts the first drum becomes the outside face as the sliver moves onto the second drum, an arrangement that produces evenly dried material.

The dryer cylinders are mounted on ball bearings and are driven through a chain drive to reduction gears.

Two 12½-hp. centrifugal fans supply air circulation in the dryer. Two heating units on top of the insulated dryer cabinet are built of plain pipe. Finned tubing has been avoided in building the heaters because of its greater tendency to collect lint and fly.

The Mark II dryer is also available in two three-cylinder models with 24- and 39-in.-wide perforations. The dryer can be operated as a single unit in plants that prefer to hydroextract dyed top and dry it without back washing. Loose, scoured wool is also handled easily and when once presented to the feed rolls, requires no further attention in passing through the dryer.

**Circle T-10 on Reader-Service Card**

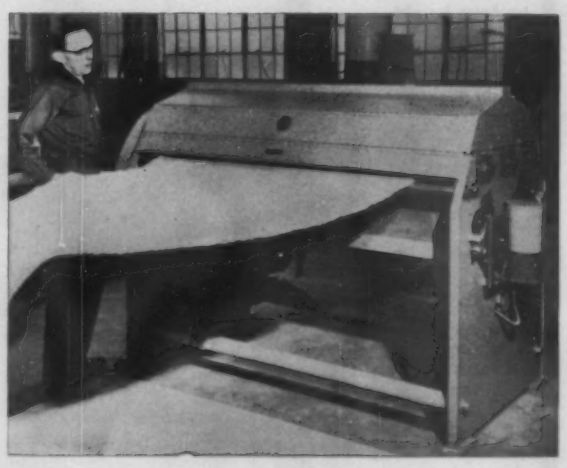
## Wet Applicator

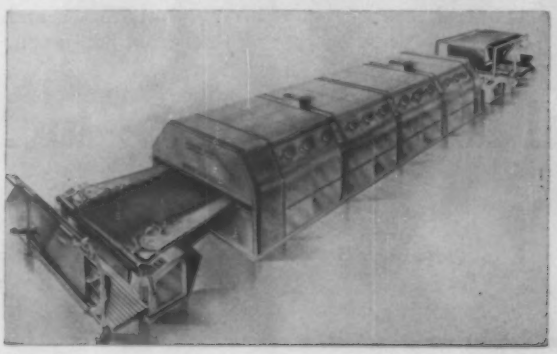
The Turbo wet applicator, built by Turbo Machine Co., Lansdale, Pa., can apply any liquid to the pile of high-pile fabrics. The adjustable brushes can be positioned to control the exact amount of liquid required and the depth of liquid penetration.

The excess liquid drains back into a pan and can be reused. The pan is easily removed for cleaning or for substituting a different solution. An automatic float on the side of the machine maintains the proper liquid level in the pan.

The cloth speed is controlled by a variable-speed drive within a range of 2 to 20 yds. per min. Materials up to 62 ins. wide can be processed.

**Circle T-11 on Reader-Service Card**





## Tenter Frame

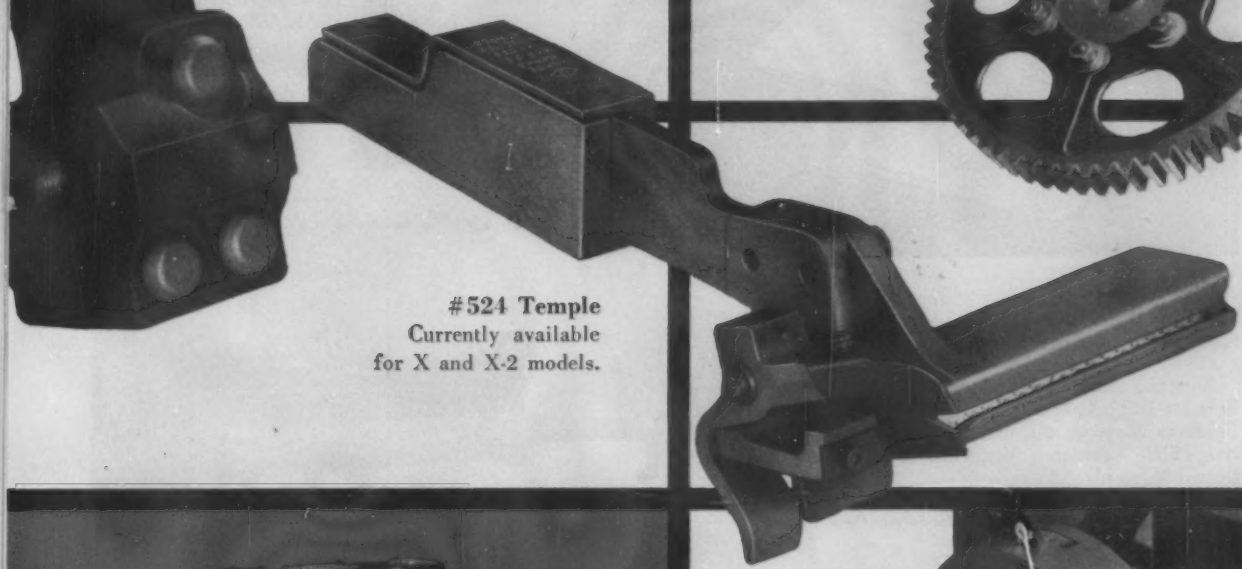
A lateral-chain high-speed tenter has been marketed by Comerio Ercole, Busto Arsizio, Italy.

Features include a compact insulated aluminum housing with easily removed filter panels, axial-flow fans mounted at an angle, and panel-board control of all frame functions. A finishing pad can be synchronized with the frame. The range has a variable-speed drive and may be had with a clip chain or pin-and-clip combination chain.

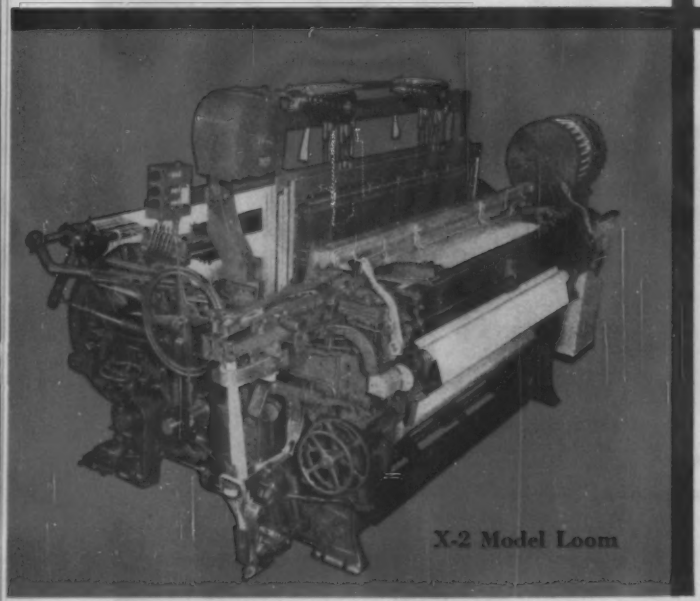
**Circle T-12 on Reader-Service Card**

**Clamping Sword Construction**
X-2 type illustrated.
Similar swords available for
X series and E model looms.

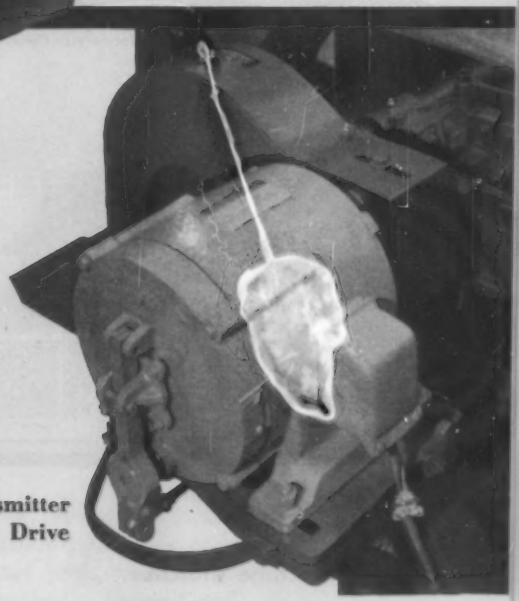
**Cam Shaft Gear and Hub**
X-2 assembly illustrated.
Similar assemblies available
for XD and XP model looms.



**#524 Temple**
Currently available
for X and X-2 models.



X-2 Model Loom



**Transmitter Type Drive**

# Next to new looms . . .

Looms equipped with the latest mechanisms and improved repair parts, *designed and built by the original manufacturer*, will meet today's rugged performance requirements.

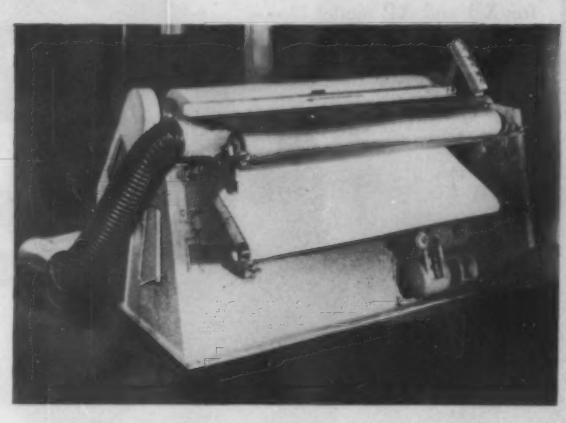
Draper improved repair parts and mechanisms — some of which are illustrated above — are designed to increase loom production, efficiency, and flexibility.

Lower maintenance costs and ease of application are additional benefits derived from the use of Draper repair parts and mechanisms.

Equipped with Draper improved repair parts and assemblies, your existing looms will be second only to *new Draper looms*.

**DRAPER CORPORATION**

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*



## Pile-Fabric Shearer

Designed for both rough shearing and final shearing of high-pile fabrics, the Turbo shearer, built by Turbo Machine Co., Lansdale, Pa., features a micrometer adjustment that varies the cut from 0.010 to 0.5 in. A control within easy reach of the operator sets the shearing depth by positioning the fabric conveyor.

The blades can be quickly sharpened by simply reversing the main cylinder and running it against the main-bed knife. Shearings are automatically removed by suction.

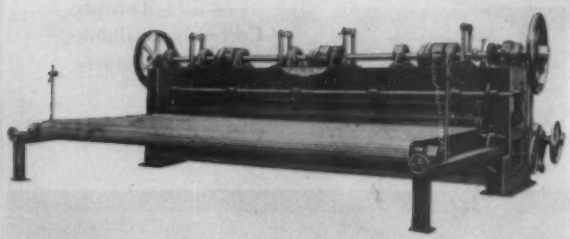
Speeds can be varied from 2 to 20 yds. per min., and the machine processes fabrics up to 62 ins. wide.

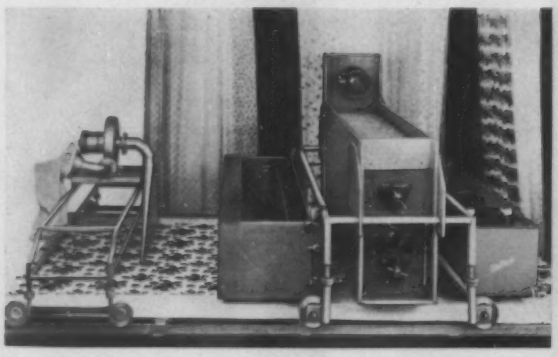
**Circle T-13 on Reader-Service Card**

## Needle-Punching Machine

A needle-punching machine is available from William Bywater Ltd., Sweet Street Foundry, Leeds 11, England. Products made by the machine include felts, filter materials, fiber laminates, bonded-fiber materials, and plasticized materials.

**Circle T-14 on Reader-Service Card**





## Electrostatic Flocking Machine

Fabrics that have been printed with suitable adhesives are flocked by a machine announced by Eloflock GmbH, Köln-Braunsfeld, Germany. Lendt & Co., 535 Fifth Ave., is the U.S. representative.

The Model No 5 machine is equipped to handle fabric continuously or will accommodate individual items.

Flock is oriented in the electrostatic field and deposited from a flock applicator mounted within the field so that particles are shot out to the adhesive along the axis of the flock.

Unattached flock is withdrawn from the fabric by suction from a vacuum system included with the machine.

**Circle T-15 on Reader-Service Card**

## Textile-Machine Clutches

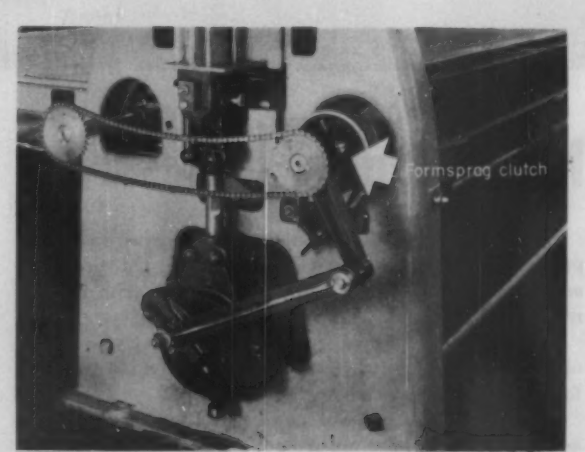
Clutches for textile machines such as needle looms, cutting-off operations on folding machines, and mattress-making machines are announced by Formsprag Co., 23,601 Hoover Rd., Van Dyke, Mich.

Present uses are the James Hunter Machine Co. needle looms, automatic batt cutting-off device and folder machine, screen printing, mattress-border machines, and others.

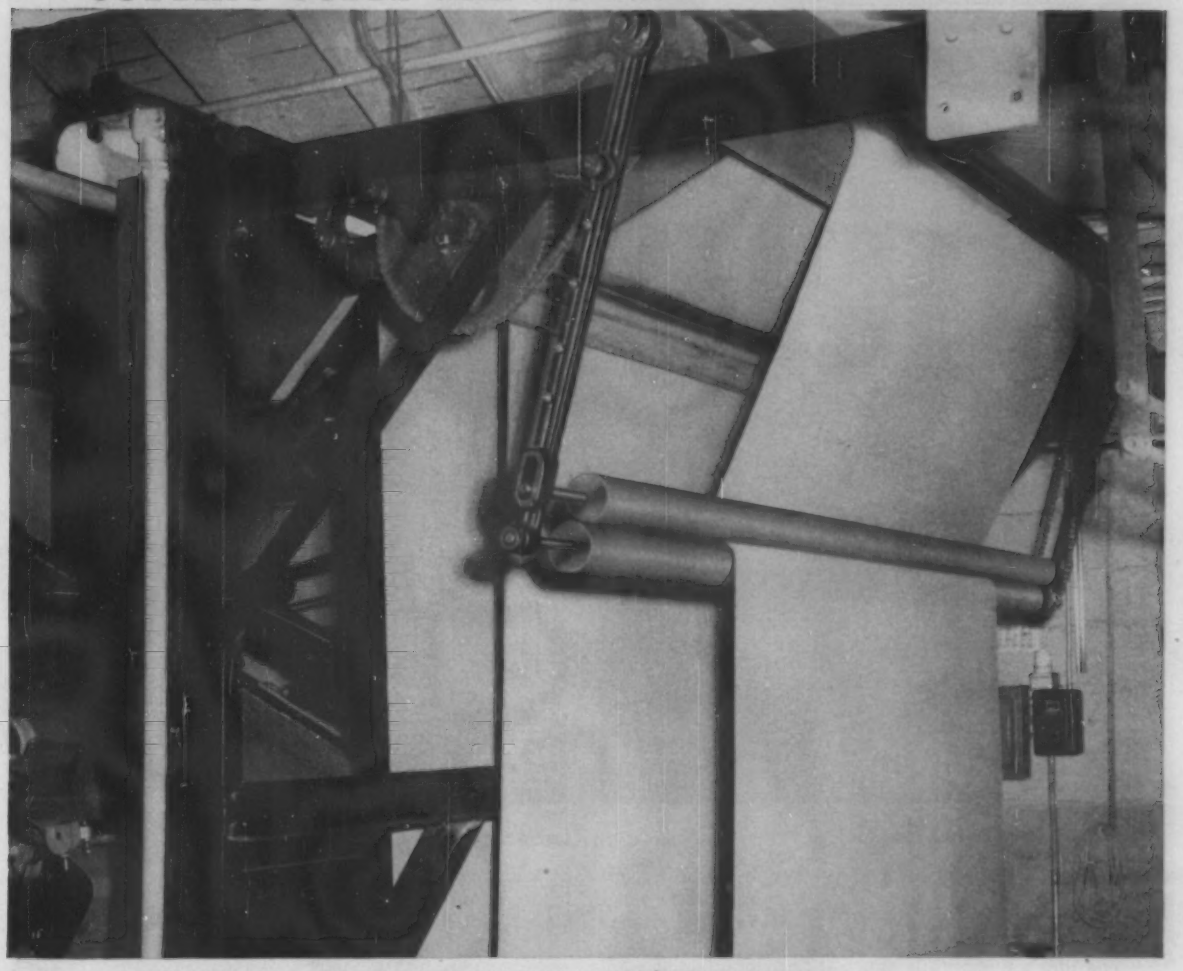
Since the clutches are very simple in design, they lend themselves to special conditions. They are compact and lightweight and provide maximum torque capacity.

A large range of designs is available for high-speed machines, high-torque requirements, many methods of lubrication, and other special features.

**Circle T-16 on Reader-Service Card**



## CUTTING COSTS with RUBBER COVERED ROLLS



## RUBBER COVERED PLAITER ROLLS PROTECT FINE FABRICS

Stowe-Woodward rubber covered rolls installed in plaiters perform consistently, if unspectacularly in protecting the quality of goods in process.

In replacing wooden rolls at the plaiter, carefully selected rubber rolls give a delicate yet positive delivery of goods, with uniform full-width tension. "Beating" and other marking is eliminated, as are the "hidden" costs involved in lapping and excessive mechanical maintenance due to vibration. Another benefit in many mills is the elimination of irritating noise common where wooden rolls are used. Ask your Stowe-Woodward Sales Engineer about the many ways in which Stowe-Woodward Rubber Covered Rolls can help to cut costs and improve quality in your mill.

*Complete roll processing plants at:*
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA

**STOWE-WOODWARD, Inc.**
*Craftsmen in rubber*
RUBBER ROLLS with a REPUTATION

*New York office:* WOOLWORTH BUILDING, NEW YORK 7, N. Y. • *On the West Coast:* HUNTINGTON RUBBER MILLS, INC., SEATTLE

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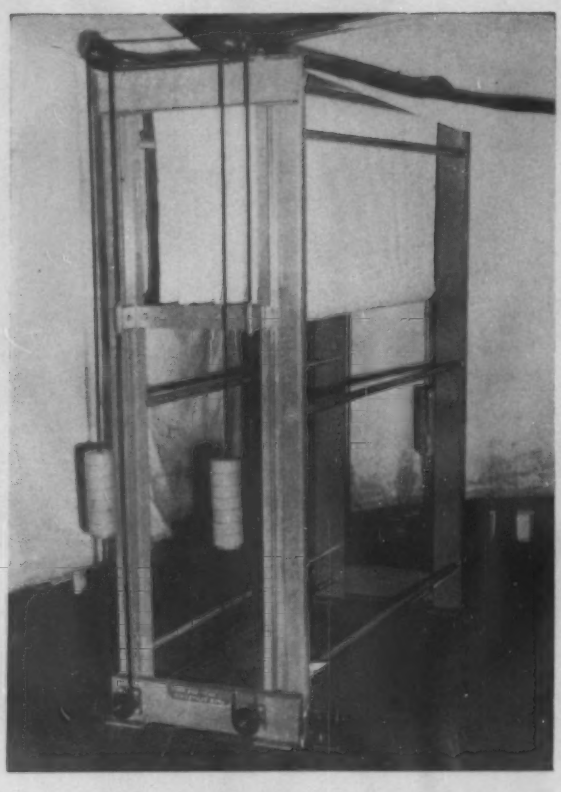


## Storage Compensator

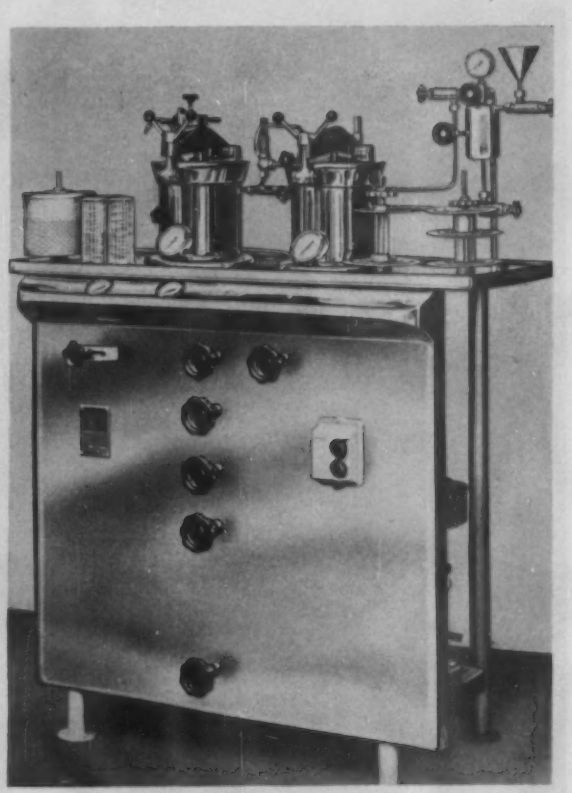
A machine that augments the scope of the usual compensating gate between units of a dyeing or finishing range has been announced by Birch Bros., 32 Kent St., Somerville, Mass.

The unit automatically stores a given number of yards of fabric in a processing range, taking up or releasing the goods as tension varies between the range components.

In addition, the compensator will store enough fabric to permit stopping a portion of the range for roll doffing or other purposes without shutting down preceding or following units.

Tension within the compensator can be adjusted to suit conditions, and an automatic slip-clutch drive for d.c. field rheostats is available if wanted.

**Circle T-17 on Reader-Service Card**



## Laboratory Dyeing Machine

A line of high-temperature laboratory dyeing machines has been announced by Scholl Ltd., whose U.S. agent is Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

The machines are made of stainless steel and are exactly proportioned to regular production models. Dyeing can be done at the boil, below the boil, or under pressure; and dyes and chemicals may be added without disturbing the dyeing cycle. A reserve tank permits making up a new bath while dyeing is going on. Dye liquors can be constantly observed through a window built into the machine.

**Circle T-18 on Reader-Service Card**

## Knitting-Machine Safety Devices

Two new safety devices for Reading full-fashioned knitting machines have been announced by Textile Machine Works, Reading, Pa.

The main-chain safety switch has been designed to stop the machine if chain buttons become loose or out of alignment with one of the chain rows. The device can be used on all Reading machines with 14-row main chains using 0.28-in.-wide buttons.

The nonrun safety device has been added to avoid the double dipping of the narrowing machine. The device is an electrical mechanical safety that is placed in operating position when the picot bars and instep bars are used for nonrun fabrics.

On knitting machines equipped with lace fingers, the electrical circuit is closed and the safety device is made inactive to permit double dipping when the lace fingers are put in operation.

A manual layout lever is provided so that the safety can be laid out when all-over mesh or other fabrics that require multiple dips of the narrowing machine are made.

**Circle T-19 on Reader-Service Card**

# Maintain stability of vat dyes longer at high temperatures with new improved Stadex Dextrin 85

**Staley's Stadex Dextrin 85 protects color in reduced solutions 30 minutes or longer at 190° F.**

Problem: How to keep vat dye solutions from undergoing progressive reduction and rapid shade changes. Answer: White corn dextrins in the reduction bath . . . because their protective action maintains stability of vat dyes longer at high temperatures.

Stadex 85 is a white dextrin specifically made for this application by an exclusive new dextrinization process that assures you MINIMUM color and UNSURPASSED UNIFORMITY.

Get the facts on the vat dyeing performance now possible using Stadex 85. Call your Staley's Representative at the Branch office nearest you or write today to . . .

A. E. Staley Mfg. Co., Decatur, Illinois
Branch Offices: Atlanta • Boston • Chicago • Cleveland • Kansas City
New York • Philadelphia • San Francisco • St. Louis

**Stadex®**




For more data, write this page number on Reader-Service card. →

## Cotton Truck

An electric-powered cotton compress truck is available from Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio. Called the Model F-45T, the truck is especially designed to meet the continuous and severe handling conditions encountered in the textile industry.

The truck's electric power provides continuous 9- to 10-hr. operation at fast speeds without dangerous gas fumes and fire hazards.

**Circle T-20 on Reader-Service Card**

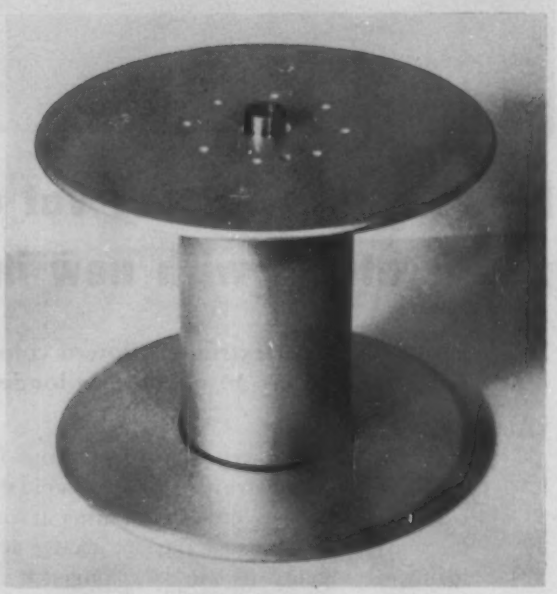
## Take-Up Bobbin

An aluminum take-up bobbin introduced by Allentown Bobbin Works, Allentown, Pa., is anodized against corrosion, and the aluminum barrel is brazed to the heads.

This construction results in a strong, single unit without joints, cracks or crevices where yarn can be trapped. The ⅛-in. aluminum gives a strength said to be greater than comparable bobbins of other materials.

The bobbin shown has a 2-lb. capacity but is available in other sizes.

**Circle T-21 on Reader-Service Card**



## Needle Oil

Rust protection, easy removal, and efficient lubrication are featured in a needle oil announced by Shell Oil Co., 50 W. 50th St., New York 20, N. Y. The oil, which is called Shell Vexilla Oil 117, is especially designed for use with nylon yarns knitted on full-fashioned hosiery machines.

**Circle T-22 on Reader-Service Card**

# Which Type ADJUSTABLE SPEED DRIVE CONTROL Do You Need? SQUARE D BUILDS BOTH!

Typical application of Adjustable Voltage Drive to large metal spinning lathe in operation at Phoenix Products Company, Milwaukee

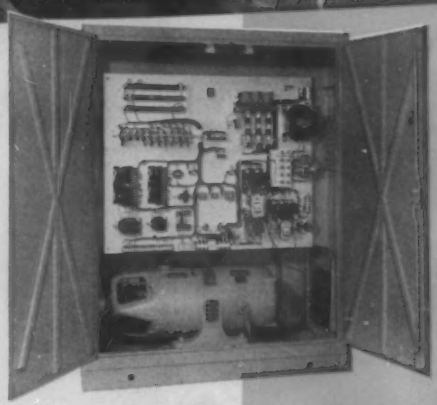
## ADJUSTABLE VOLTAGE CONTROL FOR M-G SETS...Through 400 HP

**Simplified Circuits** with rugged heavy-duty control components.

**Easy Maintenance** because standard magnetic starters, relays and timers are used in combination with static regulators.

**3 Types Available** • (*1*) magnetic amplifier exciters (*2*) dry disc exciters (*3*) rotating exciters.

**Easy to Adjust** because centralized "tune-up" elements are accessible and readily identified.



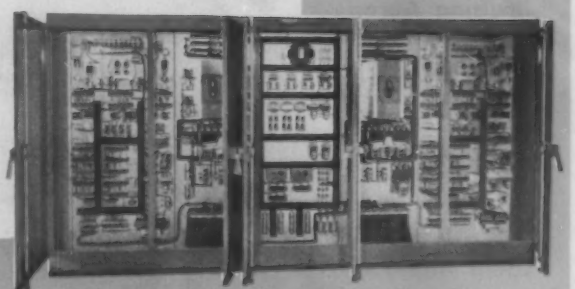
## FULLY ELECTRONIC with SIMPLIFIED FAIL-SAFE CIRCUITS THROUGHOUT

**Simplified Circuits** use less tubes. Fail-safe circuits prevent motor runaways.

**Easy Maintenance** because sub-panels can be quickly removed and replaced. "Brain" panel senses varying conditions.

**Easy to Adjust** with only a few, very accessible potentiometers.

Both types are available in two kinds of construction—standard package and custom-built.



*Write for descriptive literature. Address Square D Company, 4041 North Richards St., Milwaukee 12, Wis.*

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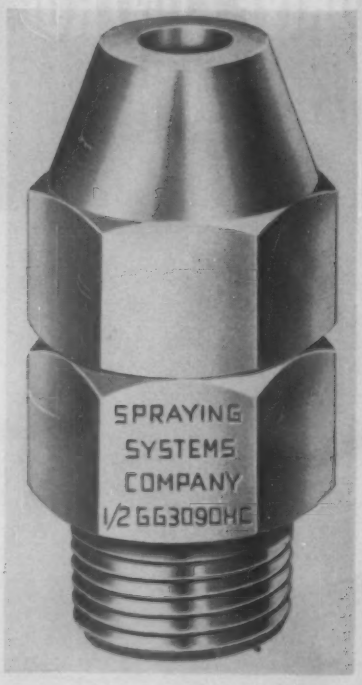
SQUARE D COMPANY

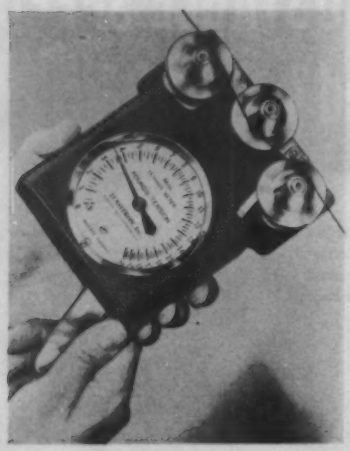



## Spray Nozzle

Spray nozzles with a wide range of capacities from 1.5 gals. per min. to 1,100 gals. per min. are available from Spraying Systems Co., Bellwood, Ill.

The nozzles have a relatively small-diameter spray pattern. At 40 lbs. pressure, the spray angle is 30°. The spray nozzles are made in pipe-connection sizes from ¼ to 5 ins. and are made of brass, steel, or stainless steel.

**Circle T-23 on Reader-Service Card**



## Tension Meter

A lightweight meter for checking the tensions of yarns, cords, and wires during processing is available from Tensitron, Inc., Harvard, Mass.

The meter has a range of 1 to 20 lbs. The controlling lever is at the side of the instrument away from the moving material to protect the operator's hands. The moving material is kept away from the operator at all times.

**Circle T-24 on Reader-Service Card**

## Shuttle Wool

Wool for shuttle friction is obtainable in endless strips from Camillo Reisinger, Reutlingen, Germany. The back of the wool is coated with a dry adhesive protected by a plastic band.

To apply the wool, it is only necessary to cut a strip of the desired length, remove the plastic covering, and stick the adhesive backing directly to the shuttle wall.

**Circle T-25 on Reader-Service Card**

## Drafting Apron

A long-lasting drafting apron that's flexible and repels lint and loose fibers has been developed by Dayton Rubber Co., 401 S. C. National Bank Bldg., Greenville, S. C.

The Dayco AP 664 apron has a drafting surface of light-blue satin-finish compounds and a semigloss inner surface of pink. The two-tone apron resists discoloration and is effective in repelling loose fibers. The semigloss interior permits easier sliding over draft-cradle nose bars and eliminates chatter and drag. The rubber fabric is impervious to static and processing oils.

**Circle T-26 on Reader-Service Card**

## Loom Stop Switch

An improved OB switch for its K-A electric warp stop has been announced by Draper Corp., Hopedale, Mass. The switch has a sintered-bronze switch-cover bushing and a hardened switch lever and rotor pin.

New material used for contact points overcomes possible switch failure due to oil or lint accumulation. Switch cover sleeves serve as protective guards.

**Circle T-27 on Reader-Service Card**

## Coning Oil

A coning oil designed expressly for bulked nylon yarns has been marketed by Laurel Soap Mfg. Co., Inc., Tioga, Thompson, and Almond Sts., Philadelphia 34, Pa. Called Ruxite B, the product is applied through oiling troughs and provides lubrication and antistatic properties that improve the knitting quality of bulked yarns.

**Circle T-28 on Reader-Service Card**

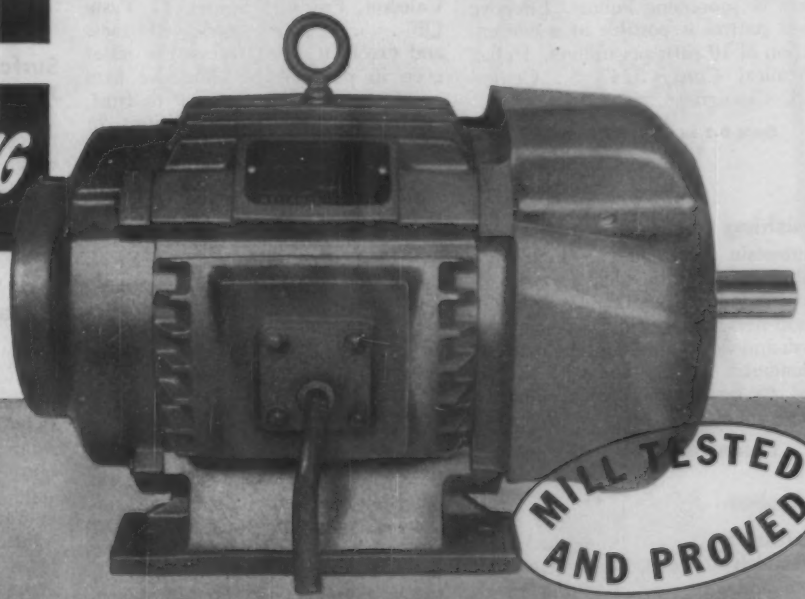
CONTINUED ON PAGE 184

# NO MORE MOTOR CLEANING

The *new* Reliance Lint-Proof Textile Motor is totally enclosed, positively eliminating lint-clogging. Lint-filled air cannot penetrate the sealed motor housing, and the high velocity cooling fan blasts lint off the outside of the motor.

It will pay you to try these new textile motors and see how they cut operating costs by eliminating motor cleaning.

*Now available—1-20 hp. general purpose, air-cooled textile motor for application on spinning, roving, drawing, and twisting frames . . . and on cards, openers, pickers, and other textile machines.* B-1508



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# IT'S LINT-PROOF

RELIANCE Totally-Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

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## Developed Color

**Diazamine Blue BRG Conc.** . . . provides a clean blue with beta-naphthol that has unusually good fastness to light and washing. Discharges are pure white, and the color does not stain acetate yarns. Sandoz, Inc., 61 Van Dam St., New York 13, N. Y.

Circle D-1 on Reader-Service Card

## Antifoam Agent

**Hodag S-118** . . . kills foam when applied by spray to effluent treatment tanks or processing liquors. Effective foam control is possible at a concentration of 10 parts per million. Hodag Chemical Corp., 7247 N. Central Park, Chicago 45, Ill.

Circle D-2 on Reader-Service Card

## Finishing Resins

**Hartoresin S-50** . . . a high-solids stabilized urea-formaldehyde syrup, is recommended as a stiffening agent for nylon nets and as a bodying agent for wash-and-wear finishes that will be calendered. Storage and bath life are said to be superior to unstabilized urea-resin syrups.

Circle D-3 on Reader-Service Card

**Hartoset F-60** . . . a modified urea-formaldehyde resin, is suggested for flame-retardant and stiffening effects on nylon laces, nets, and shoe fabrics. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-4 on Reader-Service Card

## Liquid Detergents

**Sul-Fon-Ates X-35-L, X-50-L,** and **X-60-LT** . . . are multipurpose detergents based on alkylaryl sulfonates. These anionic products are recommended for wetting and detergent applications in textile processing. Tennessee Corp., 1330 W. Peachtree St., Atlanta 9, Ga.

Circle D-5 on Reader-Service Card

## Print-Paste Thickener

**Luprintol K** . . . is an emulsifier that blends a benzene-water-dyestuff mixture into a suitably thick printing medium. The emulsion is claimed to produce softer fabrics, brighter colors, and better definition of prints. Badische Anilin Und Soda Fabrik, Ludwigshaven Am Rhein, Germany.

Circle D-6 on Reader-Service Card

## Vat Dye

**Caledon Printing Scarlet G Paste QF** . . . possesses good wetfastness and excellent lightfastness, the latter even in pale shades. The dye fixes rapidly and is not sensitive to frost, variations in steaming conditions, or concentration of reducing agents. It is recommended as an illuminating color in discharge prints. Canadian Industries Ltd., Chemical Div., Montreal, Canada, is the Canadian agent; Arnold, Hoffman & Co., Inc., Providence, R. I., is the U. S. representative.

Circle D-7 on Reader-Service Card

## Softener

**Softolene A** . . . is a synthetic-wax emulsion designed as a softening component in resin formulations for cotton finishing. The product improves the hand and tear strength of resin-treated cottons. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-8 on Reader-Service Card

## Disperse Dye

**Artisil Direct Blue-Green G** . . . is recommended for acetate, polyester, acrylic, and nylon fabrics to produce bright, greenish shades of blue. The color exhibits good lightfastness on acetate and is stable to heat treatments used for stabilizing purposes. Sandoz, Inc., 61 Van Dam St., New York 13, N. Y.

Circle D-9 on Reader-Service Card

## Direct Dye

**Procion Brilliant Orange G** . . . possesses exceptional brightness, excellent build-up, very good fastness to light and washing, and good fastness to chlorine. It is recommended for cellulosic fabrics going into urea-formaldehyde or melamine resin finishes. Made by Imperial Chemical Industries Ltd., the color is available through Canadian Industries Ltd., Montreal, Canada, and Arnold, Hoffman & Co., Inc., Providence, R. I.

Circle D-10 on Reader-Service Card

## Surfactant Series

**Poly-Tergent J-200** . . . is a nonionic surfactant suggested for wetting and rewetting operations. The product is water dispersible and retains its properties in acid, alkali, or hard-water conditions. It is suggested for wetting out gray goods, as a component of sizes or finishes, as a dyebath assistant, or as an emulsifying agent.

Circle D-11 on Reader-Service Card

**Poly-Tergent J-400** . . . is a water-soluble gel with high chemical stability. This nonionic product has good wetting and detergent properties in water or 3% caustic or acetic-acid solutions. It is soluble in alcohol, acetone, and ethylene glycol. Small amounts are effective in scouring baths.

Circle D-12 on Reader-Service Card

**Poly-Tergent J-500** . . . suggested as a leveling agent and detergent, is water soluble and does not form salts with metallic ions. The product is compatible with basic, direct, and acid colors; and its emulsifying qualities make it suitable for the manufacture of oleic-acid lubricants for wool processing. Olin Mathieson Chemical Corp., Industrial Chemicals Div., Baltimore 3, Md.

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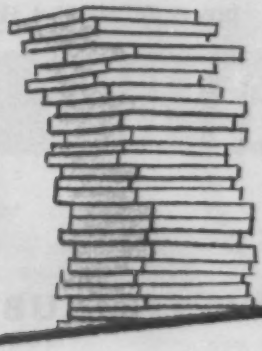

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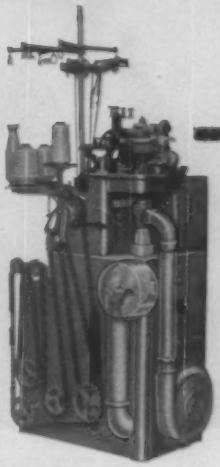

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THIS IS NO. 123 OF A SERIES ON

# GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

## HOW TO SLUB YARN EFFECTIVELY

Although the micro-set slubcatcher was designed primarily to remove soft torpedo slubs, inherent in long staple synthetic and blended yarns, it can be used to clear other yarns of imperfections too. In fact, it can be used effectively to clean any singles yarn wound on the Roto-Coner® Winder. Its effectiveness at removing soft torpedo slubs—the most difficult type to remove — is attributed to its extremely sensitive toggle action blade that can be set to trap even the smallest slubs.

Mills vary in their preference as to the degree of slubbing. Some mills wish to take out even the smallest and softest slubs; others prefer to let them pass and remove only the larger ones. No matter what their preference, the micro-set slubcatcher can be adjusted to satisfy these vastly different conditions.

When sensitivity beyond the normal adjustment of the slubcatcher is desired, a lightweight spring can be used to hold the blade open. Normally the micro-set slubcatcher is supplied with the standard spring 44-732-2 but the lightweight spring 44-732 will be supplied if specified on the purchase order. This spring makes the slubcatcher more sensitive.

When to use one spring as opposed to the other is purely a matter of choice and depends on how close a mill wishes to slub its yarn. Since increasing the sensitivity of the slubcatcher to obtain closer slubbing will also increase end breakage, mills should determine the blade opening and the spring that gives them the optimum condition both from a standpoint of quality and economy.

### Good Maintenance Practices Help Improve Quality

Often the quality of the slubbing can be improved by giving more attention to maintenance. This will also increase the useful life of the slubcatcher, and prevent excessive blade wear and unsatisfactory slubbing.

Operators should be instructed to clean the slubcatcher and tension bracket carefully. If they use a cleaning brush and strike it sharply against the micro-set slubcatcher, they may cock the slubcatcher so that the anvil (A fig. 1) over which the yarn passes isn't parallel with the thread bail sleeve (B). This may cause the yarn to rub against the blade at one point and wear a groove in it.

Other conditions that should be checked to prevent yarn from cutting blades are:

1. Anvil set too low.
2. Anvils of micro-set and precision slubcatchers not parallel to one another (fig. 2) (when micro-set is used in back of precision slubcatcher).

Periodic inspection of the slubcatcher and attention to these details will help to prevent excessive wear and maintain high slubbing standards.

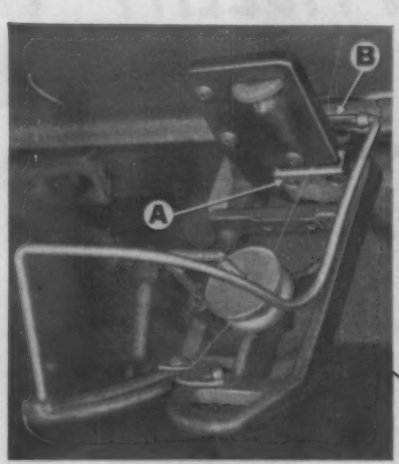


*Fig. 1*

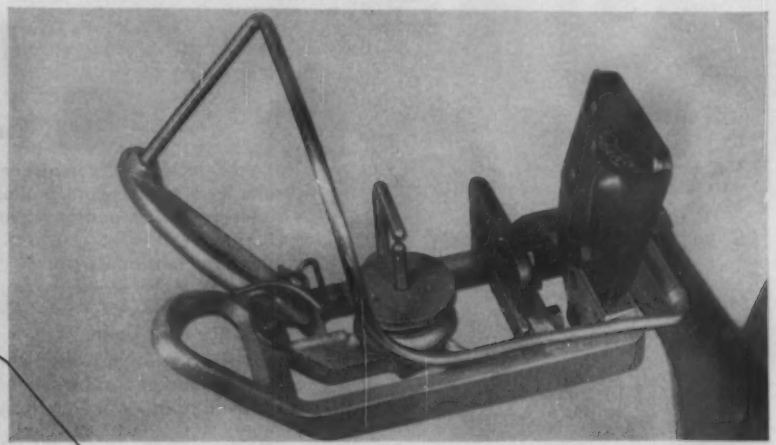

*Fig. 2*



*Winding and Twisting Machinery for Natural and Synthetic Yarns*

UNIVERSAL WINDING COMPANY

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LEESONA®

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**Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.**

## Special Brushes Help Stretch-Sock Looping

**Technical Editor:**

**We are having trouble looping stretch-nylon socks. The usual brushes do not clear out the nylon ends completely. Do you have any suggestions? (1301)**

Rubber brushes have been used successfully to clear out the nylon ends that remain after cutting. One mill took a nylon-bristle paint brush, cut off the handle, trimmed the bristles, drilled a hole in the handle, and installed it in place of a regular brush.

More care is needed in sharpening looper knives when nylon socks are looped. The tension adjustment is important too. Carboloy knives are useful in trimming nylon socks.

Striping in a soft cotton yarn after the toe has been completed helps to make a better looping job; and the cotton yarn saves you money, too.

## Use Piano Wire To Control Balloon

**Technical Editor:**

**How can we control our woolen yarn ballooning in the creel so the ends don't hit and run double? (1300)**

Reduce the speed of your warper to reduce yarn ballooning. You can reduce balooning, however, without reducing speed by running a length of piano wire from one end of the creel to the other to break the balloon.

There is no trouble when the balloon rises because it clings close to the package, but gravity affects the yarn when it falls. The wire will control the balloon at this stage.

## How To Find Cotton-Yarn Diameter

**Technical Editor:**

**Can we calculate the diameter of a cotton yarn to help us figure cloth constructions? (1298)**

The Ashenhurst formula with a correction factor of 0.92 can be used with good results to find the diameter in inches of a cotton yarn. The formula is:

$$\frac{1}{0.92\sqrt{N \times 840}}$$

Where N = Yarn number

Yarn diameters determined by the microscope are probably more precise than those obtained with other methods.

Among the methods used to find yarn diameter are formulas developed by Peirce, Duerst, Dickson, and others.

The staple length of the fiber, twist, and humidity affect the diameter of the yarn, but here's how the Ashenhurst formula stacks up against microscope measurements—

| | Yarn Diameter | |
|---|---|---|
| Cotton-yarn number | Microscope measurements (ins.) | Ashenhurst formula (ins.) |
| 12s | 1/101 | 1/92 |
| 20s | 1/124 | 1/119 |
| 25s | 1/127 | 1/133 |
| 36s | 1/173 | 1/160 |
| 40s | 1/182 | 1/168 |

## How To Finish Taffetas and Satins

**Technical Editor:**

**What would we need in equipment, and how should we proceed to finish viscose or acetate taffetas and satins? (1305)**

The basic equipment would be dye jigs, a vacuum extractor, a finish pad, a tenter frame, and a silk-type calender. The jigs should be of the tensionless type, preferably with stainless-steel tubs.

The tenter can be one of several makes suitable for framing light fabrics. The tenter clips should be in good condition to avoid torn selvages. The heating system should be hot air heated by steam coils and delivered to ducts by fans. Figure at least 75 hp. for the fans for good production.

The calender should be a three-roll type—one steel roll and two wool-felt rolls. Manual operation of the pressure linkage is satisfactory.

To process, make the fabrics up into 1,000- to 1,200-yd. rolls, using a butt-seam sewing machine. Run the roll down on the jig in cold water for a start.

Sizing compounds used on the fabrics you mention will most likely be based on gelatin and usually wash out easily. You should check the fabric for starch size, however, as some modified starches are used on rayons. The test is easily made by spotting the gray goods with an iodine-potassium iodide solution, which will turn blue or purple if starch is present.

For gelatin-sized goods, give two to four ends on the jig in a bath containing ¼ to ½% of a synthetic detergent, at 160 to 180° F. With direct colors, add 10 to 20 lbs. Glauber's salt and run four more ends. The dye formula should be adjusted to permit salting out, for economy's sake. More color can be added, if necessary, over two more ends.

For acetates, the dyeing procedure would be similar except that no salt is used with the disperse colors and somewhat more time is required. Acetates must not be boiled at any time, and tenter-frame temperatures should be kept under 250° F. When the shade is matched, flush the jig with warm water and run the goods two ends. Shell up in cold water, extract the goods over a vacuum slot, apply a softener, and tenter to width.

## Beat the Lint Problem With These Methods

**Technical Editor:**

**We are knitting hosiery from soft-twist yarn, and the lint from this yarn gives us trouble when it collects on machine parts. What can we do about it? (1209)**

This problem is tackled in a number of ways by various knitting mills. A combination of all of these methods should lick your problem.

One mill runs the yarn over an oil jar filled with needle oil. Another mill keeps its relative humidity at 60%. These methods seem to be the most successful. Another mill uses a portable vacuum cleaner and sucks the lint away from the machine parts once a week. A plastic screen between the machine lines has kept the lint from drifting to machines not running soft-twist yarn.

Experiments with the yarn twist to give maximum twist with minimum softness have been successful. You could specify longer-staple cotton in your yarn, which would of course send up your costs.

## Check Loom Speed With a Tachometer

**Technical Editor:**

**How can I figure the speed of a loom from the motor and the gear ratio? (1283)**

To obtain the theoretical speed of a loom, multiply the speed of the motor by the number of teeth in the motor pinion, and divide the result by the number of teeth in the friction gear. For example:

The full load speed of a motor is 1,745 rpm. The pinion has 18 teeth, and the friction gear has 164 teeth. Therefore,

$$\frac{18 \times 1,745}{164} = 191.5 \text{ ppm}$$

Because the clutch will slip slightly, the speed would be figured at 190 ppm.

No accurate percentage of clutch slippage can be figured because various loom settings and the mechanical condition of the individual looms and motors will affect the speed.

For really accurate figuring of loom speeds, it is best to check each loom periodically with a tachometer. If the loom speed is below standard and the loom and clutch are in good condition, the speed of the motor under full load should also be checked with the tachometer.

## Humanics — A TW Brief

### —And Fur Would Fly

Jim Woodruff, a second hand in the weave room, would occasionally call on Blair Evans, spinning-room second hand, and fur would fly.

The two men were antagonistic and would always get into an argument. Jim would criticize the kind of filling he was receiving and Blair would usually retort that the filling was all right—that the weaving department was just incompetent.

After a particularly stormy session during which the two almost came to blows, their overseers heard about it. Jim and Blair were ordered to stop interdepartmental visits and to handle their business by messenger.

They began writing very nasty notes back and forth. Each spent a big part of his time looking for things to criticize about the other. As a result, the performance of both rooms fell off and employee morale suffered.

Obviously, one or both of the supervisors was at fault, and merely separating them did more harm than good. They were grown men, not children or gamecocks. They should have been treated as men.

When the trouble was first called to their attention, the overseers should have brought Jim and Blair together for a conference. If their differences could not be straightened out, one or both of the men should have been taken off the job.

For efficient operation of a mill, there must be cooperation between departments. There can be no cooperation without a common meeting ground where a compromise can be agreed upon that is best for the mill, not necessarily best for individual departments.

## How Buttons Are Dyed

**Technical Editor:**

**We operate a sweater-knitting mill and often need to dye buttons to match the sweaters we knit. Can you tell us what type of equipment and dyes are used to dye troca, mother-of-pearl, and fresh-water-pearl buttons? What countries are the principle manufacturers of these types of buttons? (1288)**

There is no special equipment used for dyeing these buttons, but the ordinary dye vat can be used.

Mother-of-pearl buttons are given a preliminary processing prior to dyeing by steeping in a solution of potassium carbonate at 120° F. The buttons are then washed well and dried. Pearl buttons are most often dyed with basic dyes in an alcohol solution or in a 50-50 solution of water and alcohol. The alcohol acts as a penetrant and carries the dye pigment into the pearl substance with greater efficiency than when a water dyebath is used.

Pearl buttons are steeped in the color solution for several hours until they have acquired the desired shade. The solution must be stirred frequently during the process.

After dyeing, the buttons are washed well in water and then in a weak soap solution. They are rinsed well in cold water and dried slowly to keep them from cracking. Colors such as black and deep browns are obtained by staining the buttons with a solution of silver nitrate and oxidizing.

Troca buttons of salt-water origin can be processed in this manner. The dyeing of fresh-water-pearl buttons differs in some respects, but the methods of processing are somewhat secret.

Both types of pearl buttons are made in the U.S. Buttons are made in Japan and the Philippines from fresh-water pearl and ocean pearl. Ocean pearl buttons are also made in West Germany.

## How To Test Nylon-Plated Socks

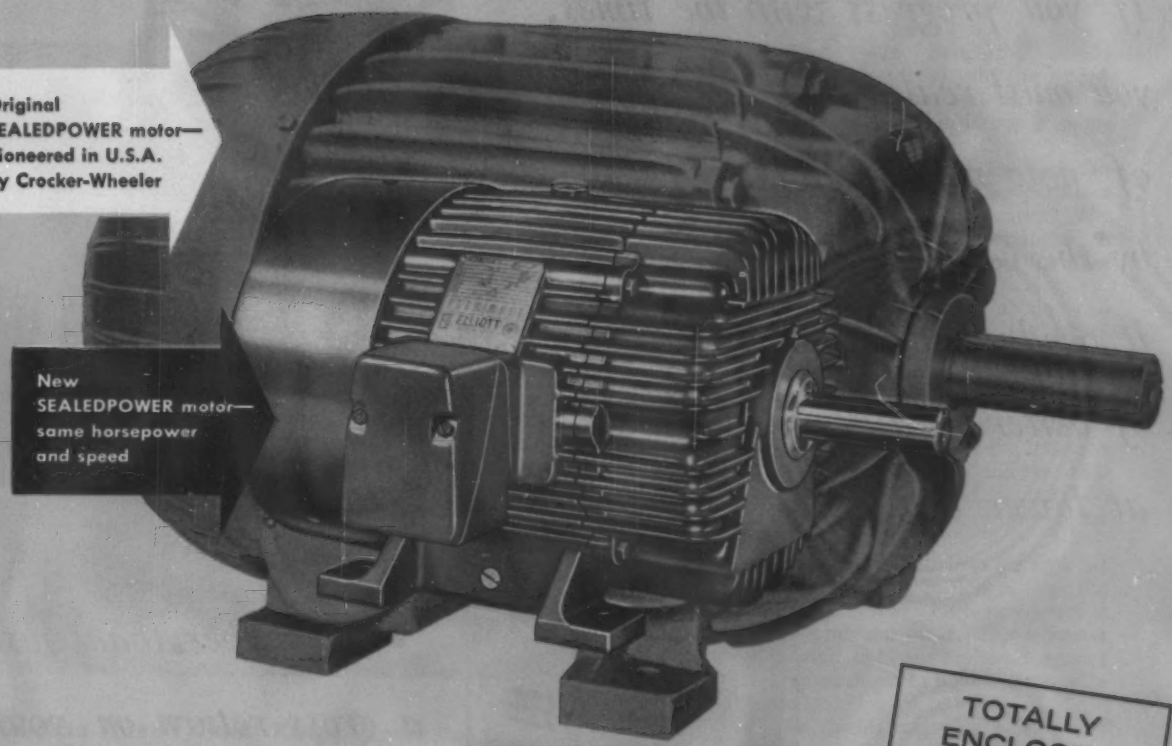
**Technical Editor:**

**We are knitting socks from wool yarn plated over nylon yarn. Can we detect faulty plating before the socks are dyed? (1302)**

Most mills tint one of the yarns by running the yarn through a fugitive tint during the winding or rewinding process.

One mill does the job without tinting the yarn by knitting 1 doz. socks each day from one colored yarn and one undyed yarn. The plating is checked by the knitter, and the test socks are passed through to the dyehouse, where they are dyed one of the dark colors on the range.

# Inside and Outside . . . entirely new

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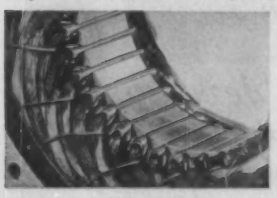
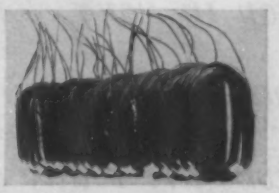
## NEW Elliott SEALEDPOWER Motors Produce MORE POWER per POUND

### Superior Insulation Improves Motor Performance



Stator slots are lined with new, revolutionary synthetic materials having greater dielectric and mechanical strength than those previously used.



Motor coils are group-wound from continuous lengths of Vinylastic wire, with no brazed or soldered connections within groups.

In the new Elliott Crocker-Wheeler Type N motors, better utilization of copper, insulation, and electrical steel produces more horsepower per pound than earlier designs.

This is one of the *balanced design* factors that contribute to the outstanding performance of these motors. Others are highest quality electric steel, rigid frames and brackets, choice of anti-friction bearings to suit your operating and maintenance conditions, and a variety of highly effective enclosures, including dripproof, totally-enclosed and explosion-proof designs.

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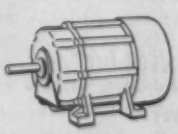
OTHER C-W TYPE N MOTOR ENCLOSURES

Totally-enclosed non-ventilated

Dripproof Protected



Totally-enclosed, fan-cooled Frames 256 U and smaller

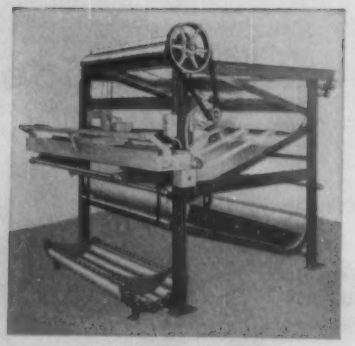
**ELLIOTT Company**

CROCKER-WHEELER DIVISION

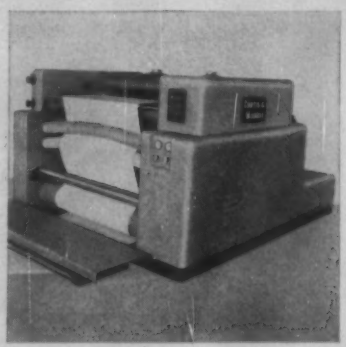
***WRITE*** **for new bulletin describing Elliott C-W Type N Motors. *Address:* Elliott Company, Crocker-Wheeler Division, Jeannette, Penna.**

W6-7

*If you progress with the times, you must realize that the advantage of new machinery is judged today by the results it produces in the way of better quality at lower cost . . .*



3 WAY SCRAY a space saver in a cotton finishing range



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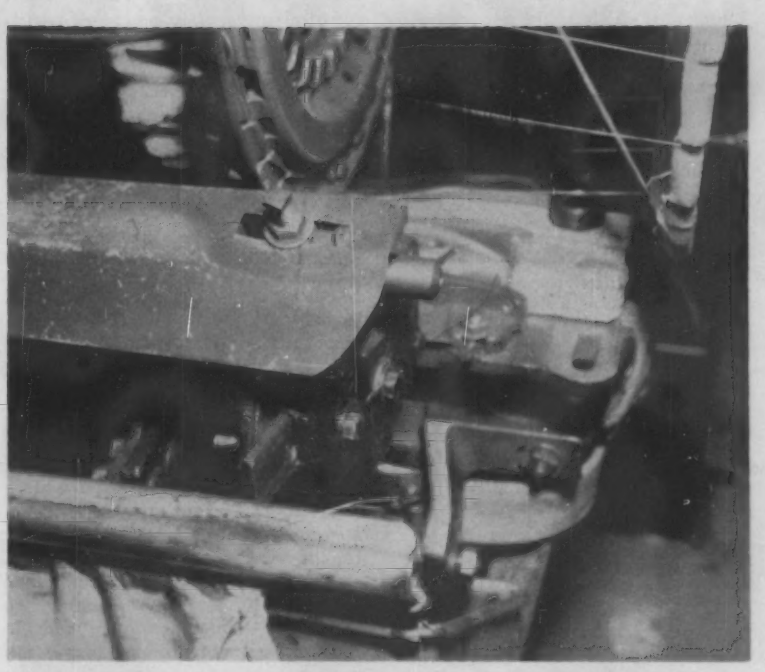


## Shield on Thread Cutter Keeps Waste out of Cloth

Much of the waste material that is woven into cloth on Draper looms comes from the Stafford thread cutter.

Waste yarn from the battery thread holder drops into the thread-cutter mechanism and in turn is thrown into the shuttle box at filling transfers.

We have eliminated much of this waste from our fabrics by putting a shield over the thread cutter. The shield is made from sheet metal. A local metal shop made them for all of our looms.

The shield is slotted at one end for the two setscrews in the filling-knife-carrier-bracket holder; the other end has a hole for the setscrew in the filling slide-lever collar.

To fasten a shield to a Stafford thread cutter, we remove the setscrews from the bracket holder and the slide-lever collar. The shield is placed on the thread cutter, as shown in the photograph.

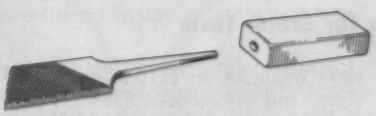
The removed setscrews are replaced with set screws ½ in. longer than the original setscrews. Each new setscrew has a jamb nut on it. The setscrews and jamb nuts are tightened against the metal shield to hold it securely in place.

The shields cost only a few cents each and can be put on a loom in a short time. (K-3507) *Schwarzenbach Huber Co., Altoona, Pa.*

## Ramp Makes It Easy To Dump Bobbin Trucks

Heavy trucks containing bobbins, roving, or yarn that have to be dumped into bins present a lifting hazard in most mills. Some mills use hydraulic or air lifts, but most plants still depend on the strong muscles of operators.

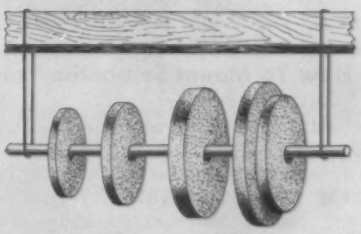
We made the job much easier at our plant by building a portable ramp that reduces the emptying to a tilting rather than lifting operation. The ramp shown in the photograph is made of wood and mounted on low casters. The operator can easily move the ramp to any bin in the room. (K-3522) *Parkdale Mills, Inc., Gastonia, N. C.*



## Old Picker Sticks Make Good File Handles

Many loomfixers and others use files without handles as issued. This practice is very dangerous because serious injury can result. There is no need to use a file without a handle when a very serviceable one can be made in a few minutes from material at hand.

Cut off a suitable length of picker stick and drill a hole in one end slightly smaller than the prong of the file. Insert the prong in the hole and drive it into the handle until tight. If desired, the handle can be shaped and sanded, but this extra work is not necessary. (K-3029) *Albert Frantz, Berwick, Pa.*



## Use an Overhead Rod To Store Grinding Wheels

Grinding wheels can easily become broken or chipped if stored carelessly. They also warp if piled in a bin that subjects them to changes in temperature and relative humidity.

The best way to store grinding wheels is to thread them on a mandrel or rod and suspend the rod overhead. This method of storage puts no strain on any part of the wheel, there is free air circulation, wheels cannot become damaged, and they do not take up space in the storage area. (K-3144) *W. E. Warner, England*

## May Prize-Winning Kink

The best Kink published in the May issue of TEXTILE WORLD, according to our reader-judges, was:

**"How To Mount Synthetics Yarns for Break Tests"**

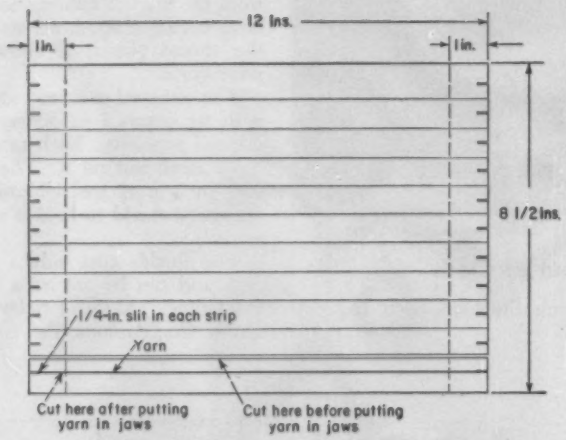
**By H. A. Mereness**
**Charlottesville, Va.**

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prize-winning Kink is reprinted below.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.




### How To Mount Synthetics Yarns for Break Tests

Man-made fibers, which are smooth, strong, and relatively soft, present difficulties in testing for tensile strength. The use of the regular flat jaws in the Instron tester causes many jaw breaks; and subjecting the yarns to sufficient pressure to hold them in the flat jaws changes the cross section, flattens the filaments, and reduces the breaking strength.

Here's how we worked out an improved technique for laboratory breaking-strength tests:

First, we ran breaking-strength tests on 30-den. acetate, 300-den. viscose, and 270-den. Fortisan. Three different methods were used to grip the specimens in the tester jaws. The yarns were held in (1) ordinary flat steel jaws, (2) flat steel jaws with the yarns mounted on ¾x12-in. cardboard strips, and (3) grooved flat steel jaws with the yarn cemented on cardboard strips and inserted in the tester so that the clamps did not touch the yarn.

A 10-in.-gauge length on the Instron tester was used for all tests, and 20 tests were made on each yarn.

Of the three kinds of mountings, the second method produced the highest breaking strengths, particularly for viscose, where the increase in strength was 26% over tests with the flat jaws. Fortisan, on the other hand, seemed quite insensitive to the method of gripping.

The second method also gave the lowest number of jaw breaks: 42% fewer than the flat-jaw method. Elongation-to-break was greater for the second method, being 3.7% greater than for the flat jaws.

While the coefficient of variation for viscose and Fortisan was considerably less for the second method than for the first, it was higher for acetate.

We found the use of individual cardboard strips to be preferable to cementing similar cardboard pads to the flat jaws, since there is a question as to how long the padding should be used before renewing. The cardboard strip is used but once with the second method.

To make the pads, the cardboard is marked off into ¾x12-in. strips, as illustrated, and a ¼-in. slit is made in the ends of each strip. The yarn is either threaded continuously from one strip to the next or single lengths are used, depending upon the method of sampling.

The strips are cut off one by one and mounted in the jaws of the tester as needed. After mounting and clamping, the ends of the strips are cut off about 1 in. from each jaw. The yarn and cardboard pad are adjusted for initial tension, and the test is then made in the regular manner.

Some kinds of very soft and smooth monofilament yarn cannot be successfully tested by any one of the three techniques described. In the case of polyethylene monofilament, for instance, satisfactory results can be obtained by sticking the yarn to the cardboard with No. 202 "Scotch" masking tape. The tape will protect the soft monofilament and allow the yarn to be broken without slippage in the jaws of the tester. (K-3411) *H. A. Mereness, Charlottesville, Va.*

# CUTLER-HAMMER THREE-STAR MOTOR CONTROL BRINGS PEAK PERFORMANCE TO COTTON CARDS

Throughout the textile industry progressive mills are converting their cards from dangerous, cumbersome line shaft drives to modern, efficient, individual electrical drives. These modern card rooms are cleaner, safer and many times more productive. Consistently mill after mill specified C-H control while modernizing . . . knowing Cutler-Hammer Three-Star Card Control would assure them the dependability, safety and peak performance so vital.

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These magnetic, across-the-line starters are available in three types; starters only, fusible combination starters, and circuit breaker combination starters. All feature C-H time-tested vertical contacts which never require maintenance with all normal use. The fusible combination starter includes a contactor type disconnect switch with an externally operated handle. The circuit breaker combination starter also includes an external operating handle which can manually trip the breaker. Multiple padlocking of the operating handle in the "off" position guarantees safe card maintenance...no unauthorized operation.

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For more data, write this page number on Reader-Service card. →

## Under-Size Drills Can Be Used in a Drill Press

Sometimes it is necessary to use a drill smaller than the drill chuck can hold. For light work, the drill can be built up by wrapping the shank with fine emery cloth or paper. For a heavier job, wrap the drill shank with tape of the sort used by electricians.

This method can also be used to make emergency repairs to shuttles. The head of a small nail is cut off, and the shank is wrapped with tape or cloth and secured in the drill chuck. The nail is drilled into the shuttle, cut off flush, and countersunk.

A repair of this sort will usually last as long as the shuttle; and there is no danger of further splitting the wood, as can happen when a nail is driven with a hammer. (K-3159 *H. E. Wenrich, Berwick, Pa.*

## Break In Rings With Flowers-of-Sulfur Mixture

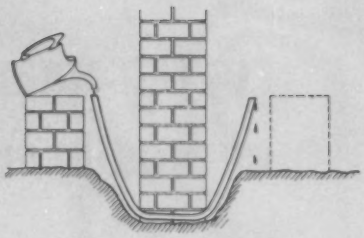
There are many ways to break in spinning rings, and we must have tried most of them before we arrived at this method:

Make up a mixture consisting of 1 lb. of castor oil, $\frac{1}{8}$ lb. flowers of sulfur, and $\frac{1}{8}$ lb. of graphite. Lubricate the rings with the mixture after each doff for the first 64 hrs. and once a week for the next 15 weeks. Wipe the rings carefully after each traveler change to remove abrasive deposits; then lubricate with the mixture.

You will find that this procedure will give a smooth, hard polish to the rings and pay dividends in longer traveler life and better yarn quality. (K-3452) *M. C. Dutt, India*

[*A similar method of breaking in rings was recently submitted by L. V. Reynolds, Lancashire, England. He says "An old Lancashire custom, handed down from my grandfather, is to mix flowers of sulfur with spindle oil and lubricate the rings during the break-in period.*

*"I cannot explain what makes the method work," he writes, "but results are amazing. The rings receive a wonderful temper, and end breakage is reduced."*—EDITOR]



## Water-Filled Hose Makes an Accurate Level

It sometimes is necessary to find the height of an object in relation to another, but there is an obstruction between the two. For instance, a pillar is constructed near a wall and another one with exactly the same height is needed on the opposite side of the wall.

An easy way to find just how high to build the second pillar can be determined with a hose and water. Place one end of the hose at the top of the first pillar, run the hose under the wall, and raise the other end and fill with water. When the water is level at both ends of the hose these two points will be exactly level. (K-3491) *J. Sharp, Bradford, England.*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What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

**RULES OF CONTEST**

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1957.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
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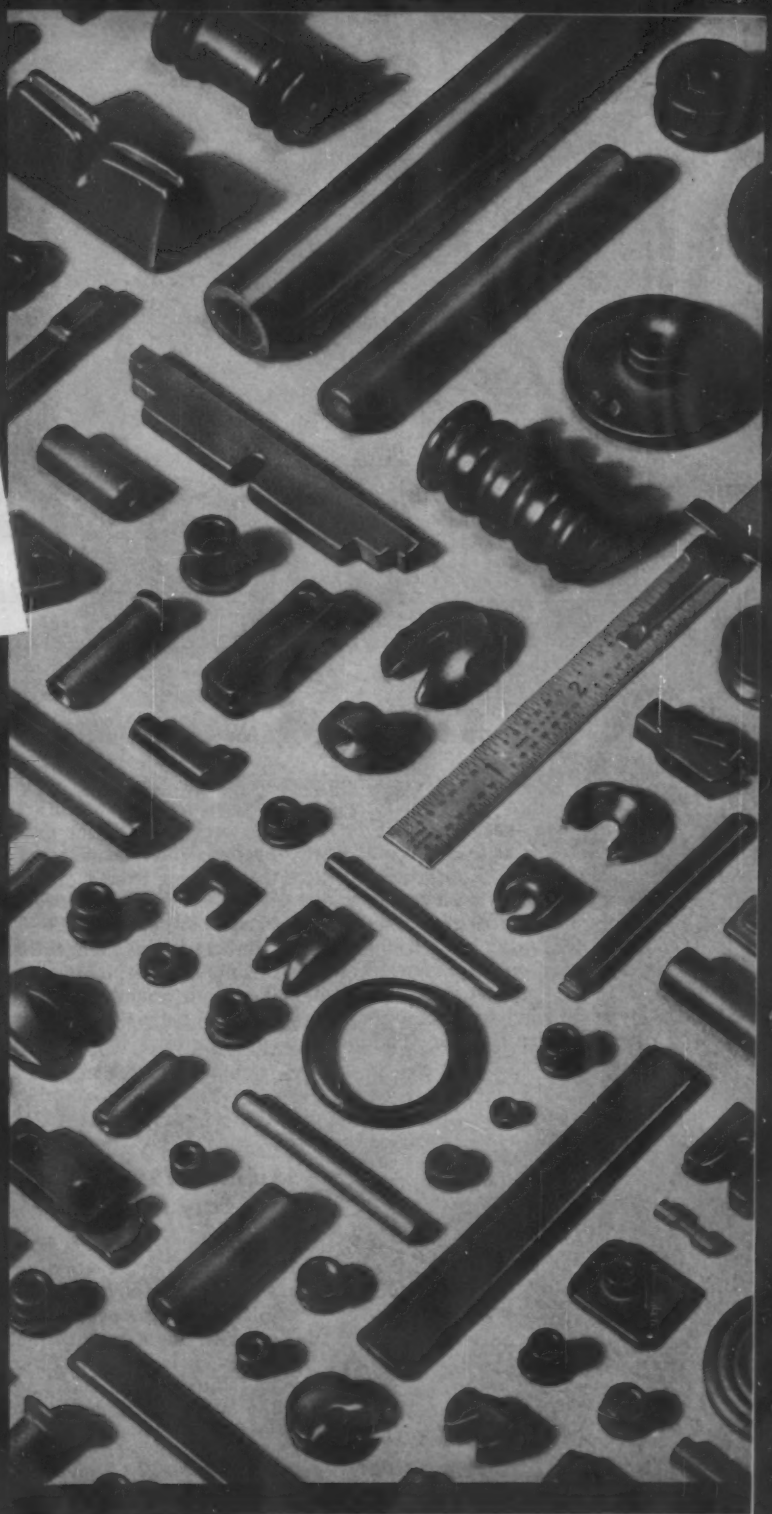

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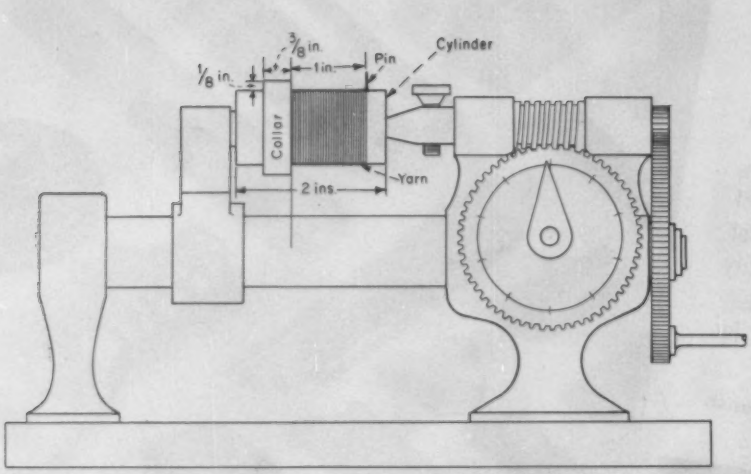
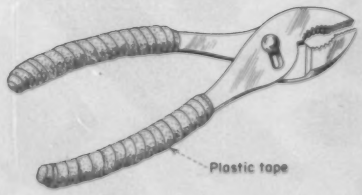



## Find Actual Yarn Diameters With Modified Twist Counter

There are many rules and formulas for finding yarn diameters for given yarn numbers; but the nature of the fiber, percent of blends, and twist cause variations. Knowledge of the yarn diameter is often necessary in designing cloth because it must be known how many ends will lie side by side in a 1-in. space.

A twist counter can be easily adapted to wind any type of yarn on a small wooden cylinder. The indicator on the counter gives the number of turns required to fill a 1-in. space. The reciprocal of this number is the fractional-inch diameter of the yarn that is being wound.

If the cylinder is made so that its circumference is exactly 3 ins., the number of turns times three will equal the number of inches wound. From the length wound and the weight, the actual number of the yarn can be checked. (K-3415)




## Wrap Plier Handles To Make Them Shockproof

Plastic electrician's tape will make plier handles shockproof for work around electrical wires and switches. Wrap the handles securely with at least three layers of the tape to prevent any leakage of current.

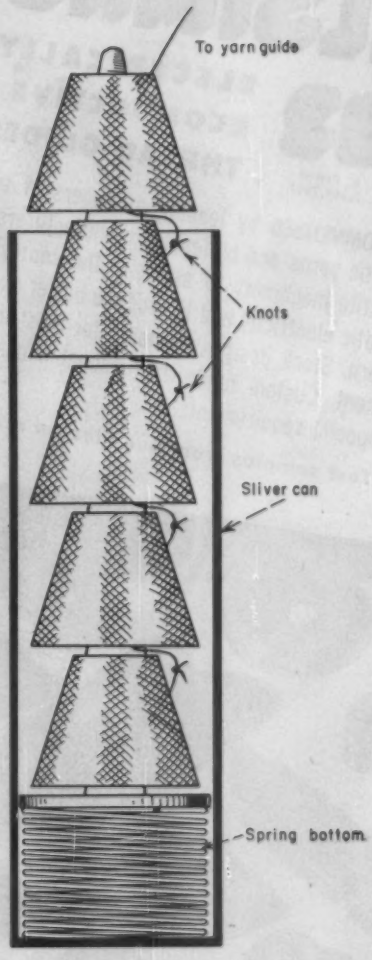
The plastic tape makes a neater and cleaner job than ordinary tape, and its slick surface prevents an accumulation of dirt and grime. (K-3161) *Robt. Franz, Berwick, Pa.*

## Lubricate Screws and Bolts For Easy Removal

Because of the high humidity in a mill, screws and bolts often rust and are hard to remove. To guard against this condition, coat the threads with graphite mixed with grease. It takes only a moment to coat the screw or bolt threads with this lubricant, but the effort may save much time later. (K-3271)

**$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.**

**Send in your Kink now.**




## Stack Yarn Cones in Cans For Continuous Knitting

Many knitters now use the pigtail tie-up method of knitting cotton yarns. This idea can be extended so that the machine can be loaded with several cones of yarn that will last all day.

The cones are placed in a small-diameter sliver can with a spring-loaded bottom. As each cone is placed in the can, the end of the yarn is tied to the end of the cone above.

As the yarn is used from the top cones, the spring base of the can raises the yarn so that the cone in use is always at the top of the can. Empty cones are removed when the machine is knitting the heel or during the knitter's regular patrol.

The cans can be loaded at the start of the shift in the stock room and moved into position when the last cone on the first can has been nearly used. This method cuts machine downtime and yarn waste. (K-3260)

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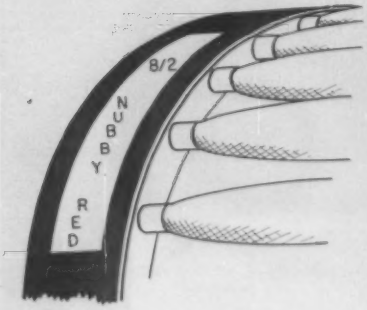



## Masking Tape on Battery Helps Avoid Mixed Filling

We run several different numbers of cotton filling, each identified by a tint. But the batteryhands sometimes make the mistake of placing the wrong filling in a battery.

To overcome the trouble, we place a piece of masking tape on the rim of the battery hopper. On this strip of tape is written the filling number and tint. The tape is easily changed when a change in filling is made.

The marking of each battery with tape not only eliminates the trouble with mixed filling but also provides a quick method for inspectors and supervisors to check the different kinds of filling. (K-3157) *H. E. W., Berwick, Pa.*

## Hosiery-Machine Tool Saves Fixers' Time

Many nuts on hosiery machines are difficult to reach and tighten because levers and other parts obstruct them. A wrench can be easily made that will save much time in tightening these hard-to-reach nuts.

Saw off the head of an open-end wrench of the size you require. Weld or braze a piece of ¼-in. steel rod to the sawed-off head. Cut the rod to the length you require, weld a handle on the end of the rod, and you have a tool that will save you hours of time. (K-3406) *T. Gasper, Martinsburg, W. Va.*

## Fit Yarn Eyelets All the Same Way

Most circular underwear and outerwear machines have three-hole eyelets over the yarn cones to guide the yarn from the cone to the top stop motion. The eyelet also serves to act as a slub catcher that causes the yarn to pull down the top stop motion.

The three holes are of different sizes to take care of different yarn numbers. When you install the eyelets, turn them so that the small holes are always on the left. If you thread the yarn through the correct hole, the yarns won't touch each other as they wind off the cone.

When you change yarns, you should move the spider ring that holds the eyelet rods so that the hole in use is directly over the center of the cone. This little adjustment will give you the best operating conditions. (K-3227)

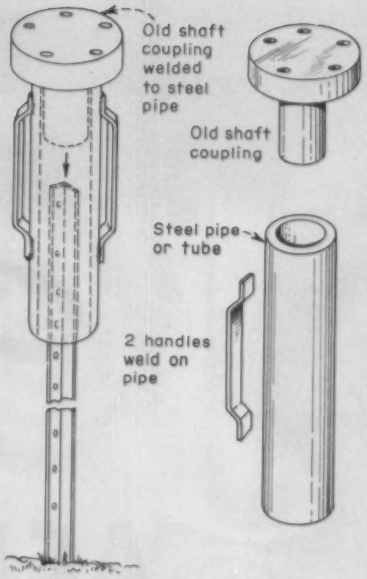
## Hole in Hammer Handle Keeps Center Punch Handy

A center, or countersink, punch is frequently needed in machine and maintenance repair work. But when this little tool is needed, it is often necessary to make a trip to the tool box for it.

By drilling a hole in the hammer handle and keeping it plugged with a wooden or cork stopper, the punch will always be at hand and out of the way until needed. (K-3470)

**$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.**

**Send in your Kink now.**




## This Shop-Made Tool Will Drive Steel Posts

It is sometimes necessary to erect either a permanent or temporary fence around an excavation, building, parking lot, or other area about the plant. If pipe or metal posts are used for the fence, they can be easily set with a shop-made driver.

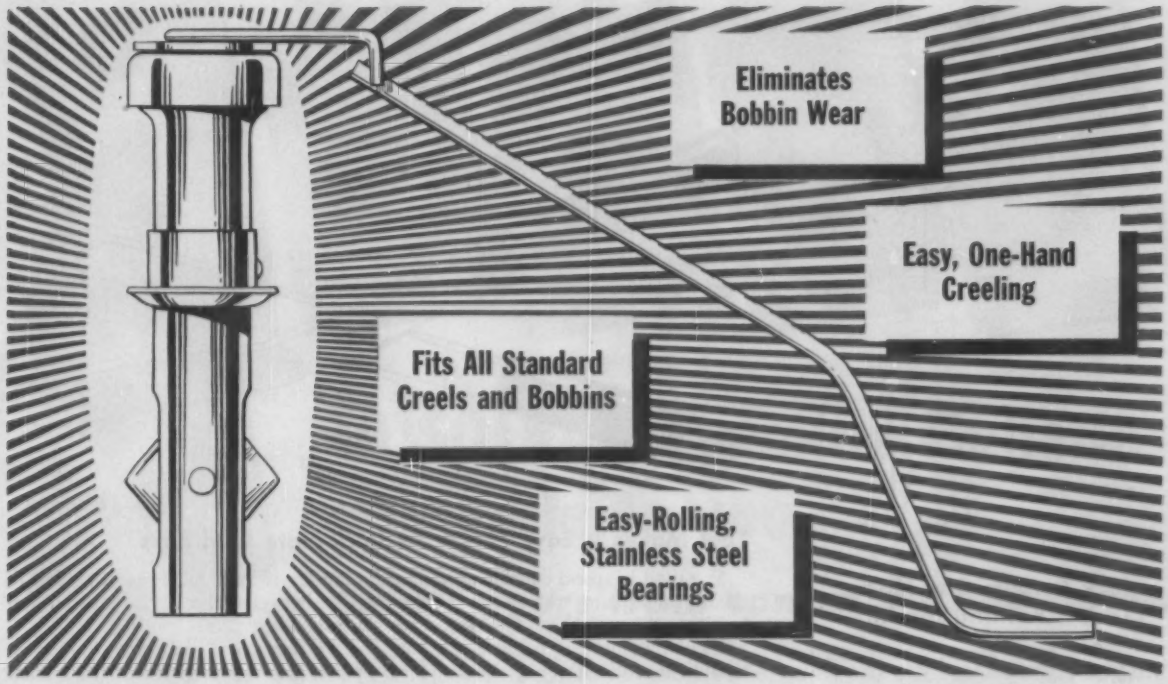
The driver is made from a length of pipe or tubing with two handles welded to the sides. An old shaft coupling or other heavy metal piece is welded to the top. The tube not only serves to guide the driver but also holds the post straight as it is being driven. (K-3424) *Chas. H. Willey, Concord, N. H.*

## Lard Oil Keeps Lifting Rods Clean and Stops Sticking

Our lifting rods on spinning frames used to stick and cause a lot of trouble. The rods also collected excessive lint and fly. Ordinary grease did not help.

The operators would peck on the rods with a hammer to loosen them. This practice frequently loosened the rods too much or damaged them.

We solved the problem by putting lard oil on the lifting rods. Now the rods stay clean and move freely at all times. (K-3498) *Kings Mountain Mfg. Co., Kings Mountain, N. C.*

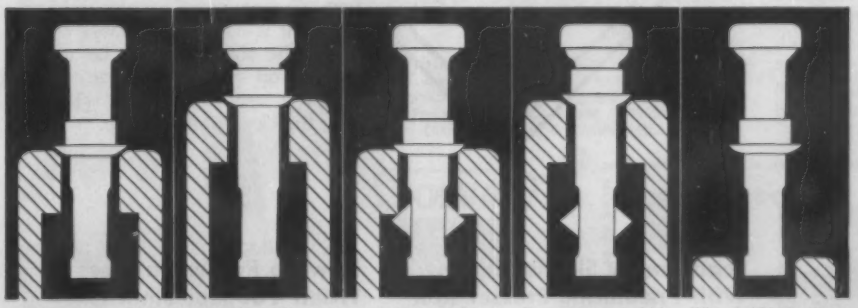



# IT'S HERE! THE ALL-NEW BENDIX SPIN-MASTER BOBBIN HOLDER!

Here's the greatest improvement in bobbin holder design in many years—the Bendix* Spin-Master! Made by the manufacturers of the reliable Eclipse Bobbin Holder, the Spin-Master is adaptable to *all types* of creels and to practically *all sizes* of bobbins. Its exclusive nylon latch holds the bobbin securely yet does not gouge or wear the bearing surface. Because of its unique design, the Spin-Master makes creeling a one-hand operation. Its extra-free rolling action is superior to that provided by any other bobbin holder. And, of course, it is thoroughly corrosion resistant. Order today, or, if you prefer, write for additional information.

*REG. U.S. PAT. OFF.

**HERE'S HOW IT WORKS**



Bobbin holder slides easily and freely into top of bobbin. Nylon latch is concealed within the barrel of the holder.

Bobbin is pushed up against collar of bobbin holder. At this point, latch is still concealed inside the bobbin holder.

As bobbin is allowed to drop, collar of bobbin holder slides down to original position and latch snaps into place, suspending bobbin.

To release bobbin from holder, the bobbin is again pushed up, raising the collar of the holder. Latch is still securely in place.

When bobbin is again allowed to drop, latch retracts into body of bobbin holder, so that bobbin may be easily removed.

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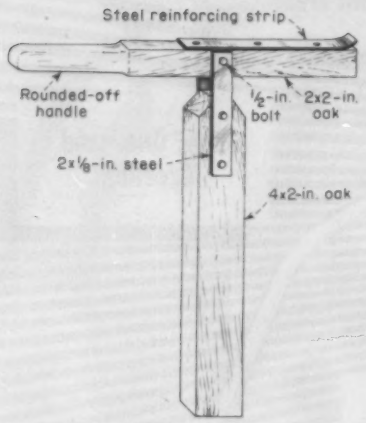


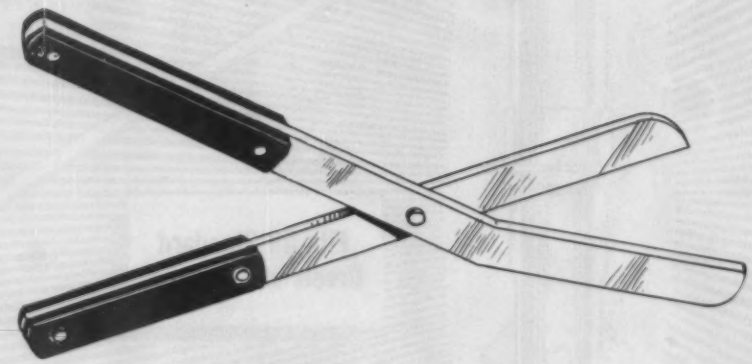

## Jack Permits One Man To Lift Knitting Machine

Two men formerly were used to raise knitting machines when they were leveled in our plant. We made a jack that permits one man to raise the machines easily.

To make the jack, cut a 44-in. length of 4x2-in. oak, saw the top to a point, and attach a length of 2x⅛-in. iron on either side of the oak piece at the top so that 4 ins. of the iron project above the wood.

Drill a ½-in. hole near the top of the metal parts to receive the handle. Make the handle from a 2x2-in. piece of oak 40 ins. long. Trim the sharp corners off the wood at one end to form the handle.

Drill a ½-in. hole in the handle 12 ins. from the end that fits under the machine. Reinforce this part with a strip of 2x⅛-in. iron, and attach the handle to the jack with a ½-in. bolt. You are ready now to lift the machine by placing the jack under the bottom ring. Push down on the handle and up goes the machine. (K-3444)

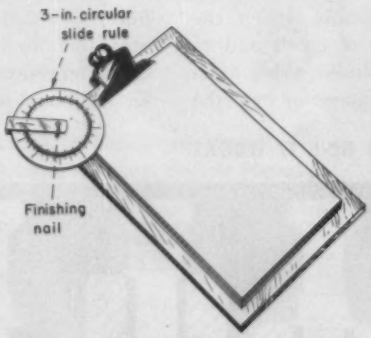


## Tool Makes It Easy To Rotate Snick-Plate Grid Bars

We used to spend considerable time taking snick plates out of our spoolers to rotate the grid bars. The chore was particularly annoying because grid bars have to be rotated very frequently.

The problem was licked by building the tool shown in the sketch. The tongs have an over-all length of 18 ins. and are made from ⅜x¾-in. flat iron. One leg is bent to permit the tool to pass between thread stands without breaking the yarn.

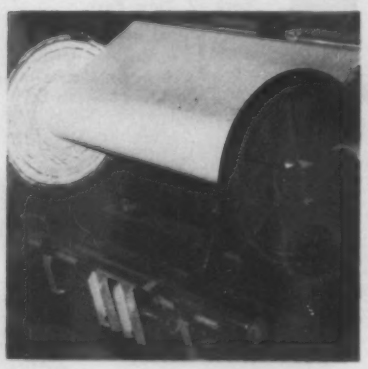
To use, press grid bar ½ in. out of plate, grip bar with tool, turn to new surface, and push bar back in place. You will find this method saves much time and temper. (K-3451) *Arnold Goss, Alexander City, Ala.*




## Make Quick Calculations With Clip-Board Slide Rule

Calculations are often necessary on the job when you are doing timestudy work. A slide rule is usually used for these calculations.

A finishing nail driven through your clip board from the back makes a handy hanger for a circular slide rule. When it is necessary to make calculations, the slide rule can be used in position on the clip board or it can be instantly removed for use. (K-3492) *J. J. Buckley, Granby, Que.*



## Load Empty Slasher Beams With Pneumatic Presser Roll

We have a pneumatic presser roll on our slasher. An easily made attachment for this roll enables it to double as a beam loader. After the roll lifts the empty beam into place, the attachment is removed.

The full beams are doffed with a hoist and moved with a monorail carrier. (K-3412) *T. M. Donalds, Clinton, S. C.*

## How To Prevent a Mess When You Cut Stencils

When stencils are cut in the conventional manner, the cuttings usually fall on the floor and make a mess.

This mess can be prevented by installing the stencil-cutting machine on a table that has a hole cut in the top. Install a drawer underneath the hole in the table and the cuttings will fall in the drawer, which can be removed easily when it is full. (K-3274)

# 10 SOLVAY Technical Bulletins available to you

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These bulletins include properties, use, storage, handling, testing, analytical procedures and other data from accepted sources, from Solvay's own research and from our vast store of field experience accumulated during the past 75 years. Following is a partial listing of the contents of the individual bulletins:

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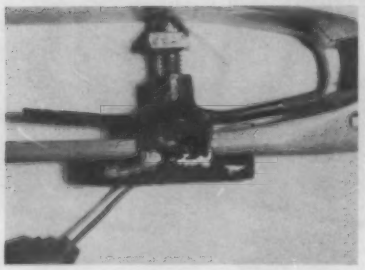

## Make a Placement Gauge For Shuttle Tensioning

Here's a homemade gauge that permits the user to place all holes correctly in shuttles that use nylon leader wire as a filling-tensioning material. The gauge is made of flat steel and has four holes in the top bar. These holes are drilled at a 45° angle toward the center of the bar, as shown in the photograph.

To use, the gauge is placed over the side of the shuttle with one end of the inside bar against the inside shoulder near the shuttle eye. The clamping screw, with a shuttle spur welded to it, is run out against the opposite shuttle wall to hold the gauge in place.

A $\frac{1}{16}$-in. drill is used to make the holes in the shuttle wall. The gauge is removed and placed on the other side of the shuttle, and the procedure is repeated.

An empty quill is placed in the shuttle, and 30-lb. nylon fishing-leader wire is inserted through one of the holes at the top of the shuttle. The wire is threaded through the bottom hole, leaving a loop that just touches the empty quill. A round toothpick inserted in the hole and wedged tight will hold the wire in place. Loops of wire are placed in the other holes in like manner.

Different weights of nylon leader wire may give better results for different numbers of filling yarn. This tensioning material has been in use in our mill for some time, and it is proving to be better than fur in both service life and in eliminating kinky filling. (K-3049) *Roy Huffman, Lynchburg, Va.*

## Two Wire Baskets on Truck Makes Doffing Twisters Easy

Doffing bobbins at twister frames can be done faster and more easily by using two wire-mesh baskets on a truck, as shown in the accompanying photograph.

The truck is welded from angle iron with the two sides inclined. Wheels are bolted to the bottom.

Baskets are stainless steel so that they do not soil the yarn. One basket is filled with empty bobbins, and the other is empty to receive doffed bobbins of yarn.

Baskets of empty bobbins and full bobbins are removed from the truck with little effort since they slide off and on. (K-3490) *D. Laycock, Yorkshire, England*

## Easy Way To Figure Spooling Production

Here's a simple way to calculate spooling and creeling production in three easy steps:

1. Ends warped ÷ 2 = cheeses warped
2. Cheeses warped + cheeses in creel at end of shaft − cheeses in creel at start of shift = cheeses creeled
3. Cheeses creeled + cheeses on tridents at end of shift − cheeses in creel at start of shift = cheeses spooled

Stock is counted at the end of each shift, and the same inventory figure is used for the beginning of the next shift. Ends warped are divided by 2 (Step 1) only when two beams per cheese are run.

The whole procedure takes about 10 mins. to complete. (K-3089)

**$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.**

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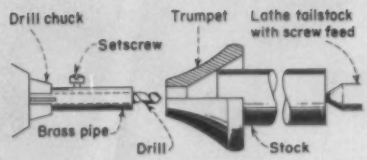



## Improved Centering Jig Is Made From Trumpet

The centering jig made from a drawing-frame trumpet [TEXTILE WORLD, Aug., '56, K-3035, p. 145] worked out fine in our shop. Now we've gone a step further in the use of drawing-frame trumpets for centering jigs.

The direct-drilling jig shown in the sketch eliminates center punching on most of our small round stock. The short length of $\frac{1}{16}$-in. brass pipe has two narrow slots in the chuck end to give a secure hold to the drill in the chuck. The drill can be set, with the screw, to extend out from the pipe any desired distance to control uniform depth of all center holes.

The drilling-jig trumpet is placed on the end of stock to be drilled. The brass pipe enters the hole in the trumpet and guides the drill to the center of the stock. When the end of the pipe makes contact with the stock, the drill has reached its predetermined depth. (K-3237)

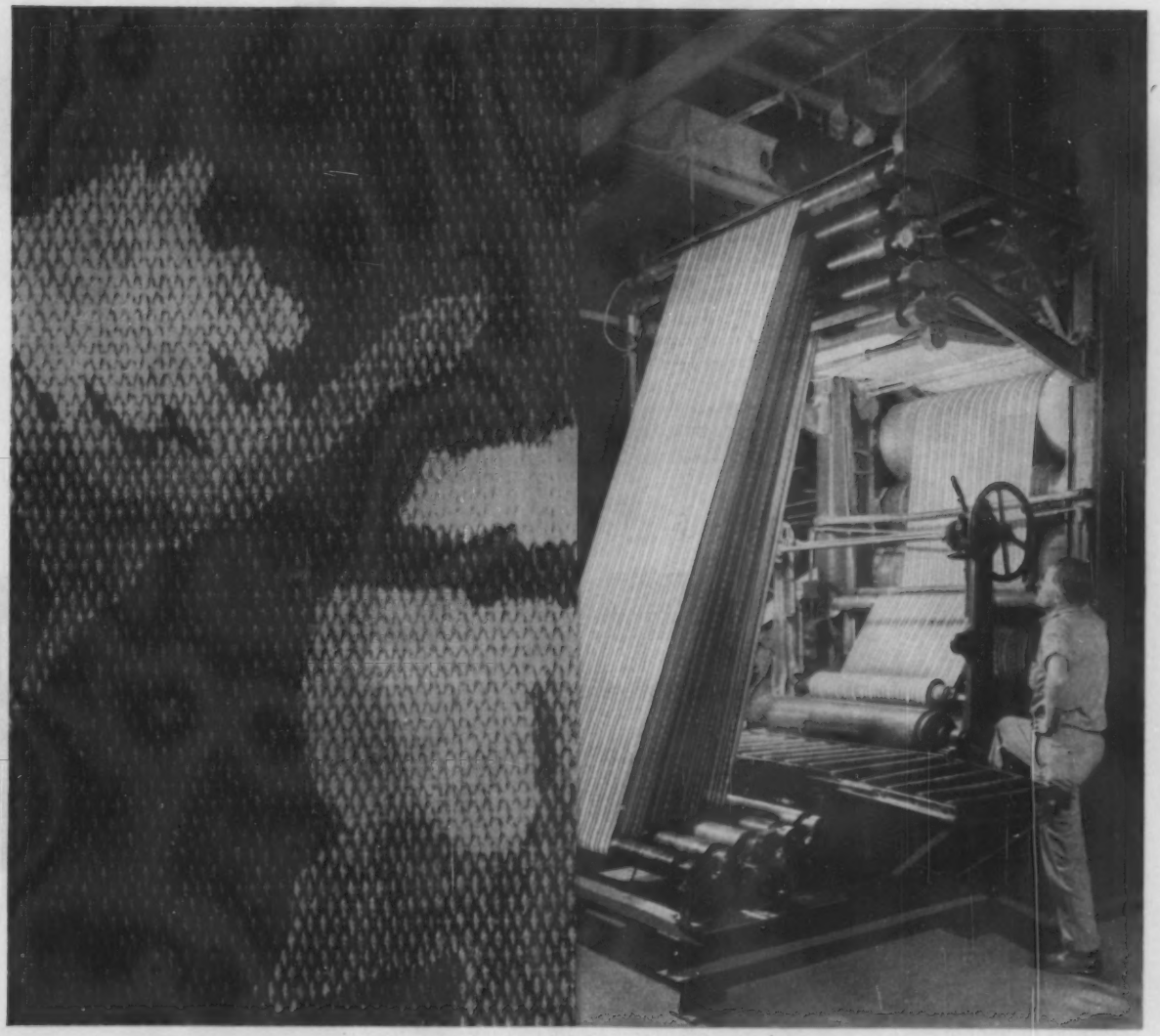
## Pointed Piece of Slate Repairs Damaged Reeds

Cut and rough reeds can often be repaired on the loom with a piece of slate.

A handy size to use is 1 in. wide, $\frac{1}{2}$ in. thick, and 3 ins. long. The slate can be ground to these dimensions on an emery wheel. One end is tapered to a point from about 1 in. from the end. If you have a coal-fired boiler at your mill, you can usually find a suitable slate in the ashes.

To use the slate on a reed, the handrail is removed from the loom; a screwdriver is stuck under the damaged end of the reed; and a piece of waste cloth is laid over the cloth in the loom and yarn to protect them from damage.

Then the sharp point of the slate is inserted into the damaged reed dents and moved up and down until the sharp edge is removed. (K-3508)



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# RHONITE R-1



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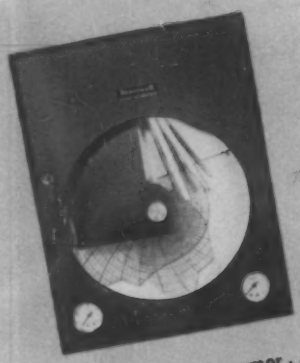

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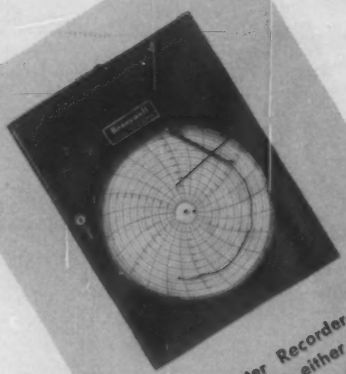

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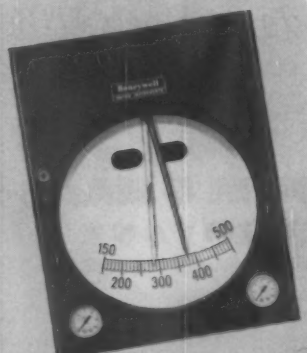

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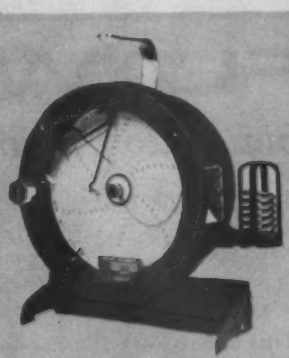

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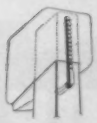

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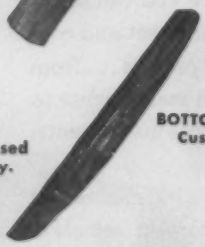

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. July, 1957

# *Outstanding* NEW LITERATURE
## *Free for the Asking*

**NO REPEATS** . . . Listed here for July are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

### TEXTILE MACHINERY & AUXILIARY EQUIPMENT

**Box spinning frame**—For spinning short-staple wastes; 0.3 to 2.0s cotton system or equivalent wool yarns. Variable speeds to suit raw stock. Platt Bros. Ltd. (F-1)

**Card coiler**—Works on any make of card, features prelubricated bearings, hardened gears; made in sizes to 18-in. dia. McDonough Power Equipment, Inc. (F-2)

**Warping creels**—Magazine and non-magazine types for cotton, rayon, synthetics. Automatic signals, stopping device. Edward J. McBride Co. (F-3)

**Pilling tester**—Combines rubbing and twisting action to simulate actual wear conditions. United States Testing Co. (F-4)

**Aluminum bobbins**—One-piece construction, stand pressures exerted by nylon yarns. Allentown Bobbin Works, Inc. (F-5)

**Cone support**—Helps prevent snags in unwinding yarn from cones as yarn is fed to knitting machines. Sizes to suit any cone. Beier Mfg. Co. (F-6)

**Welt knitter**—Two-feed, revolving-cylinder type, in 340- and 400-needle models, and 370- and 474-needle models. G. Stibbe & Co. Ltd. (F-7)

**Latch-needle knitting machine**—Jacquard patterns in purl or plain stitch can be made on 16- and 18-in.-cylinder models, 5 to 14 needles per in. Wildt & Co. Ltd., Adelaide Works. (F-8)

**Warp-knitting machine**—Steel frame, shipped set up; positive feed, central lubrication. Liba Maschinenfabrik GmbH. (F-9)

**Interlock machine**—Multifeed machine produces stripes without special mechanism; 9- to 30-in. cylinders, 14 to 24 needles per inch. For wool or cotton. G. Stibbe & Co. Ltd. (F-10)

### SUPPLIES & CHEMICALS

**Industrial chemicals**—Booklet describes products and processes of Union Carbide & Carbon Corp. (F-11)

**Water demineralizer**—For laboratories, small plants. Amberlite resins produce mineral-free water. Capacities to 18,000 grains. Enley Products, Inc. (F-12)

**Glycols**—Diethylene glycol and triethylene glycol are discussed in a booklet from Carbide & Carbon Chemicals Co. (F-13)

**Industrial chemicals**—Acids, alkalis, salts, rare-mineral compounds, catalysts, organic chemicals listed in booklet from Harshaw Chemical Co. (F-14)

**Chemical bulletins**—Materials and methods of use in textile and other processing listed in folder from Becco Chemical Div., Food Machinery & Chemical Corp. (F-15)

**Silicate facts**—Leaflet describes uses, unusual applications of sodium silicate. Vol 37, No. 4, of a series from Philadelphia Quartz Co. (F-16)

**Laboratory furniture**—Desks, cabinets, hoods, sinks, tables for plant laboratories listed in Bulletin FS-227 from Fisher Scientific Co. (F-17)


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**Benzyl chloride**—Uses as a fungicide, bactericide, insecticide, and others listed in Bulletin BZYL 1-57 from Heyden Newport Chemical Corp. (F-18)

**Stearic acids**—Grades for every purpose described in an informative booklet from Emery Industries, Inc. (F-19)

**Epoxy-resin curing agents**—Technical Bulletin F-8665 lists a number of organic amines suitable for curing epoxy resins. Curing times vary from a few minutes to over an hour. Chemicals Dept., Union Carbide International Co. (F-20)

## MAINTENANCE & ENGINEERING

**Longer belt life**—How to get the most out of V-belts told in Bulletin 2046234C. Allis-Chalmers Mfg. Co. (F-21)

**Steam traps** — Inverted-bucket-type traps in a choice of materials and sizes to suit many purposes. Bulletin 154. V. D. Anderson Co. (F-22)

**Air filter**—Disposable glass-fiber filters for air-changing systems. Filters in roll form; described in Bulletin 780. American Air Filter Co. (F-23)

**Transformer maintenance** — How to keep transformers at peak efficiency is set forth in Bulletin B-4716-B from Westinghouse Electric Corp. (F-24)

**Multiple-feed oilers**—Central reservoir supplies bearings through metering valves and pipe lines. Bulletin 38-A describes. Trico Fuse Mfg. Co. (F-25)

**Adjustable-link V-belts**—Brochure answers common adjustable-V-belt operational and maintenance problems in questionnaire form. Manheim Mfg. & Belting Co. (F-26)

**Nonlubricated bearings** — For high-temperature applications or where chemical resistance is important. Bulletin from Electro-Nite Carbon Co. (F-27)

**V-belt-drive data** — Specifications, charts, tables, and diagrams concerning V-belt drives make up Data Book No. 10 from Raybestos-Manhattan, Inc., Manhattan Rubber Div. (F-28)

**Explosionproof switches** — Several types listed in folder from Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-29)

**Lubrication fittings**—Many types of fittings for all sorts of machinery catalogued and sized in Form 38-23 from Alemite Div., Stewart-Warner Corp. (F-30)

**Wheel conveyors**—Gravity wheel conveyors, in steel or aluminum. Technical information in Cat. SA-102A-1 from Sage Equipment Co., Inc. (F-31)

**Pipe-system identification**—ASA speci-


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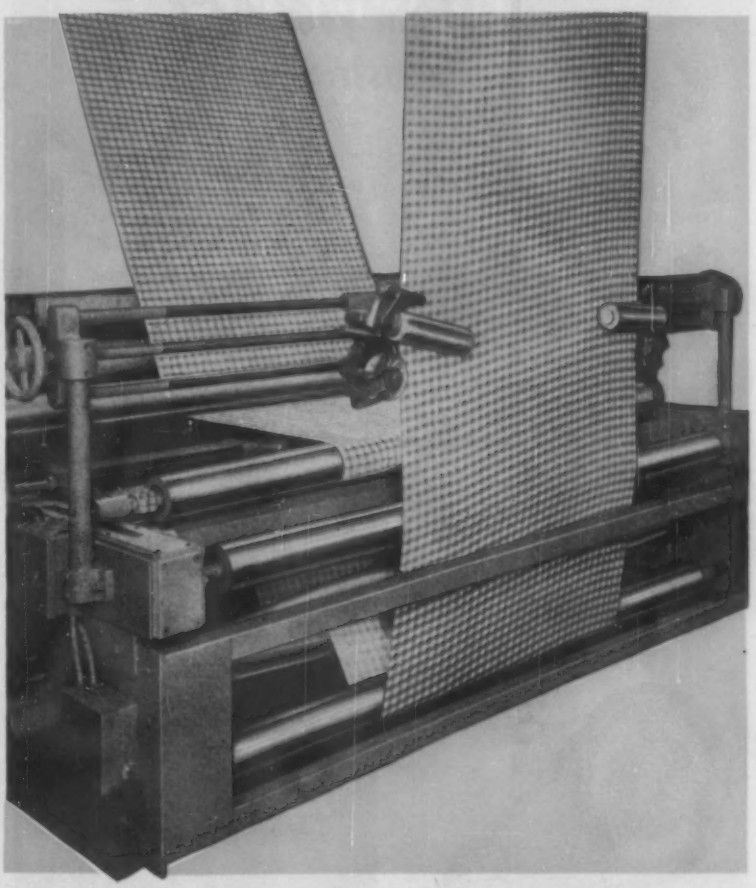

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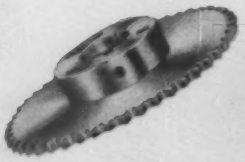

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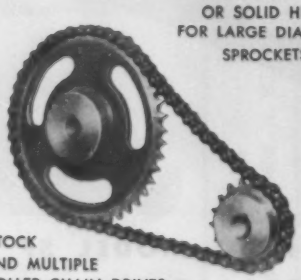

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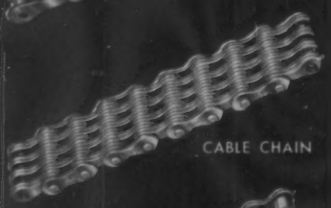
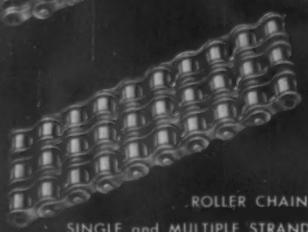


CABLE CHAIN



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fications are followed in a pipe-identifying scheme set forth in a manual from Rust-Oleum Corp. (F-32)

**Purifying LP-truck exhausts**—How to remove CO and odors from exhaust of LP-powered trucks. Reprint of paper from Oxy-Catalyst, Inc. (F-33)

**Worm-gear drives**—A wide variety of types, sizes, and capacities cover most conceivable worm-drive applications. Bulletin 145, Cleveland Worm & Gear Co. (F-34)

**Flooring grades**—Latest revisions in Northern hardwood flooring-mill grades are listed in a booklet from Maple Flooring Mfrs. Assn. (F-35)

## GENERAL

**Industrial chairs and stools**—Designed to provide each worker with proper support. Several types in various materials listed in folder from Ajusto Equipment Co. (F-36)

**Electrical-review index**—All subject matter published in Allis-Chalmers house organ "Electrical Review" indexed for period 1942-1956 by title, subject, and author. Allis-Chalmers Mfg. Co. (F-37)

**Fork-truck data**—Electric fork trucks described, major components analyzed, and features highlighted in brochure from Clark Equipment Co. (F-38)

**Automatic recording** — Punched-tape method of recording, duplicating, speeding up office work set forth in booklet from Commercial Controls Corp., subsidiary of Friden Calculating Machine Co., Inc. (F-39)

**Packaging notes** — Packaging with plastics, how others manage, ideas; in house organ from Bakelite Co., Div. of Union Carbide & Carbon Corp. (F-40)

**Premarking equipment**—For printing labels to be applied to textile or other items. Produces 7,000 preprinted labels per hr. A Kimball Co. (F-41)

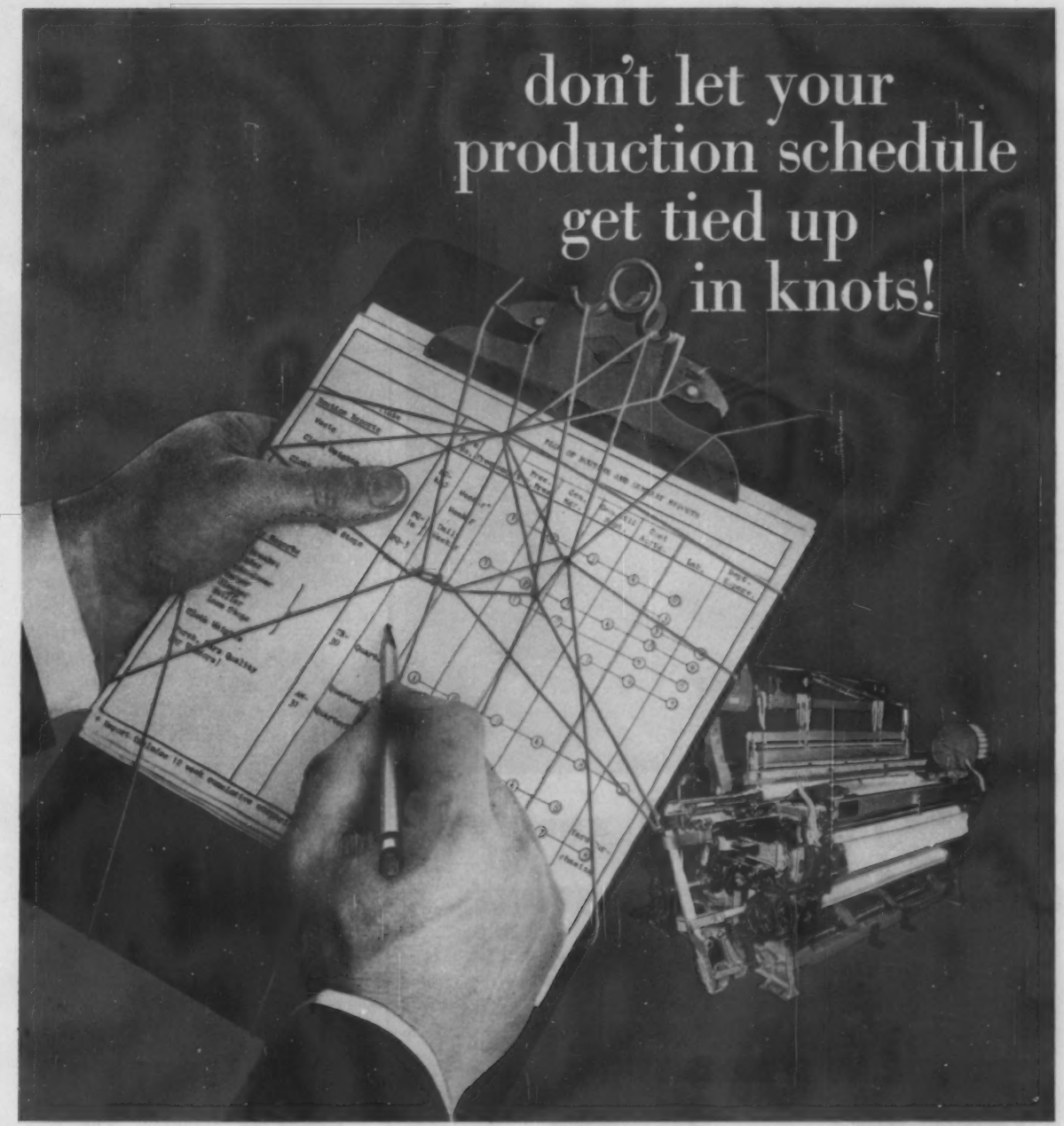
**Management**—Skill in managing time described in booklet from Elliot Service Co., Inc. (F42)

**Tag imprinter**—Versatile machine that completes necessary data on standard tags and labels, described in leaflet from Monarch Marking System Co. (F-43)

**Carton-forming machine**—Works from die-cut blanks, produces folded cartons at high speed. Folder from United Shoe Machinery Corp. (F-44)

**Operating lift trucks**—Booklet 1214 gives detailed instructions on proper operating procedures, maintenance, and handling of lift trucks. Hyster Co. (F-45)

**Technicians' opportunities**—The role of technicians in industry, job possibilities, how to train for them. Book-

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let from National Association of Mfrs. (F-46)

**Box-closure methods**—Various means of sealing cartons and boxes listed and described, advantages of each pointed out, in booklet from Acme Steel Products Div., Acme Steel Co. (F-47)

**Safety aids**—A guide to proper materials-handling methods, plus a kit of cartoon posters for plant use, available from Towmotor Corp. (F-48)

**Steel catalog**—Over 700 products of steel, conversion tables, weight tables, and other useful information in plastic-bound book from Engineering Service Dept., Crucible Steel Co. of America. (F-49)

**Materials handling**—Case histories, new developments in fork-truck accessories, pointers on efficient utilization in publications from Dept. R-6, Lewis-Shepard Products, Inc. (F-50)

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Textile World

## BOOK REVIEWS

**LATEX: NATURAL AND SYNTHETIC**, by Philip G. Cook; Rheinhold Publishing Co., 430 Park Ave., New York 22, N. Y.; 230 pages, $3.50.

This volume covers the origin and use of natural latex and the technology of both natural and synthetic latices such as GR-S, Buna N, methacrylates, vinyl chloride latices, polystrene and polyvinyl acetate.

End products such as foams, rubberized fibers, adhesives, models, and flooring are described. The book should be of value to chemist and manufacturer alike.

**PERSONNEL SERIES NUMBER 166**; American Management Association, Inc., 1515 Broadway, New York, N. Y.; 68 pages, $1 to AMA members, $1.75 to nonmembers.

Six papers on various phases of industrial relations that were presented at the Midwinter Personnel Conference of the AMA, Feb. 15-17, 1956, constitute this series.

Subject matter includes a specula-

# HELPFUL ANSWERS TO CAUSTIC QUESTIONS

As a leading supplier of Caustic Soda, Columbia-Southern is asked many questions each month about this versatile "workhorse" alkali. While the answers probably are not completely new to every Caustic user, they do re-emphasize certain basic points that shouldn't be forgotten. We hope that you will find this series interesting and helpfully informative.

**At what concentration is liquid Caustic Soda normally stored?**

It is normally stored at a concentration of 50%, although during winter months provision must be made to maintain temperatures above 60°F. It is general practice to dilute shipments of 73% liquid Caustic Soda to 50% concentration for storage. To store at 73%, heated tanks with special linings are required.

**How much Caustic Soda is produced along with Chlorine in the Electrolytic process?**

For each pound of chlorine, approximately 1.1 pounds of Caustic Soda are produced.

**How is solid and flake Caustic formed?**

To obtain the anhydrous forms of Caustic Soda, 73% liquor is boiled in large cast iron "fusion pots," driving off the water and leaving Caustic in a molten state. For solid Caustic Soda, the melted Caustic is poured into steel drums and allowed to harden. Flake Caustic Soda is produced by freezing the melted Caustic on a water-cooled rotary drum called a "flaker," after which it is sized by screening and packed in metal drums for shipment.

**What is the best way to dissolve solid Caustic Soda?**

There are two prescribed methods. (1) Split the drum at the seam with a crowbar and remove the metal from around the solid Caustic cake. Roll the exposed cake into a dissolving tank that is depressed below floor level. (2) Perforate the drum with a pointed tool or axe. Hoist the drum into an elevated dissolving tank. For either method, do not add water until after the Caustic or drums have been placed in the tank.

**What are some of the typical savings of customers who have changed from buying 50% to 73% Caustic liquor?**

One user invested $2,120 in equipment needed to unload and dilute 73% liquor to 50% and saved $20,979 in five years. Another user saved $2,850 in the first year on an investment of $2,650—or a return of 108%. A third one—a very large user—had a 1003% return the first year on an investment of $3,500—or a total of $35,000.

**How much is tank car handling reduced by purchasing 73% vs. 50% liquor?**

Forty percent fewer cars need to be handled for the same tonnage. For example, a customer using 2,000 tons of Caustic, solid basis, would require the following shipments:

| 73% liquid | *Tons per car* | *No. cars* |
|---|---|---|
| 8,000 gallon cars | 42 | 47 |
| 10,000 gallon cars | 53 | 38 |
| **50% liquid** | | |
| | *Tons per car* | *No. cars* |
| 8,000 gallon cars | 26 | 77 |
| 10,000 gallon cars | 32 | 62 |

If you would like amplification of any of the answers on this page, or of any other answers previously presented, you are invited to write our Technical Service Department at no obligation to you whatsoever.

Did you know that you handle 40% fewer cars when you buy 73% Caustic liquor rather than 50%, to obtain the same Caustic content?

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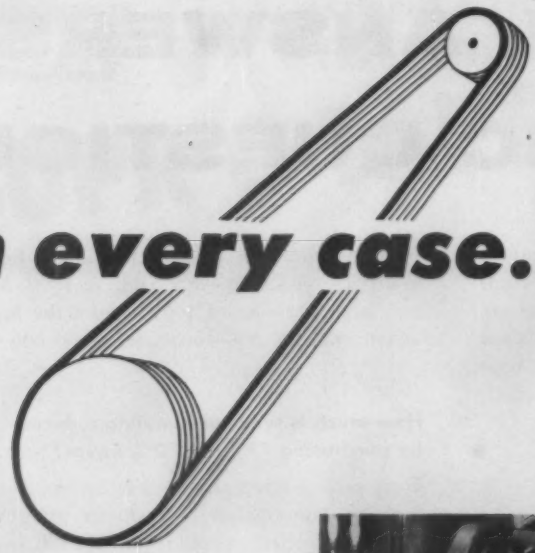

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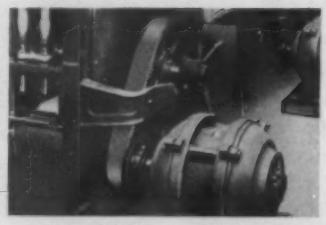

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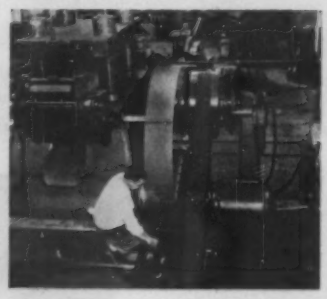

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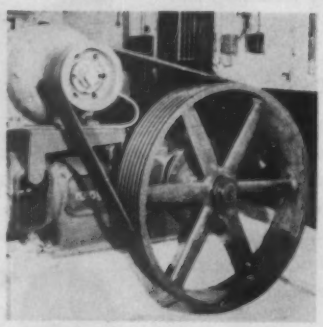

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tion on how the AFL-CIO merger is going to affect future negotiations between management and the unions; a paper on trends and problems in industrial relations; a discussion of the operational problems of the supplementary unemployment benefits; the description of how American Motors was able to set up its own agreement with its workers; an outline of the philosophies and functions of the NLRB: and a case history of how an old New England textile plant has survived the slings and arrows of Southern and foreign competition to remain a going concern.

**HYGIENIC GUIDES**; American Industrial Hygiene Assn., 14,125 Prevost, Detroit 27, Mich. Single sheets, 25¢ each.

This series of informative sheets provides basic information for plant safety engineers who must be concerned with the health hazards presented by toxic, flammable, or poisonous materials that are encountered by employees while at their work.

The latest additions to the series include data on carbon disulfide, ethylene dichloride, hydrazine, methylene dichloride, and nickel carbonyl.

Early sheets covered acetaldehyde, amyl acetate, anhydrous ammonia, aniline, arsine, benzol, beryllium, butyl alcohol, cadmium, carbon monoxide, carbon tetrachloride, chromic acid, ethyl alcohol, fluoride-bearing dusts and fumes, fluorine; formaldehyde, hydrogen cyanide, hydrogen fluoride, hydrogen sulfide, mercury, nitrogen dioxide, sulfur dioxide, 1,1,1-trichloroethane (methyl chloroform), and zinc oxide.

**PUMP SELECTION AND APPLICATION**, by Tyler G. Hicks; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; second edition, 468 pages, $8.

The plant engineer will find in this volume much useful information regarding most kinds of pumps. Basic types are described, and pumping problems peculiar to several industries are gone into in some detail.

The author supplies step-by-step procedures for analyzing a pumping problem, finding the most suitable pump, and applying it to the job.

Over 400 illustrations add to the description of a wide range of problems and pump types.



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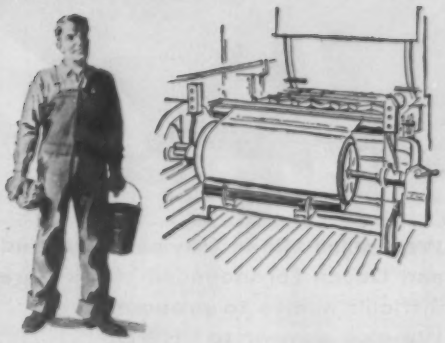
# Maintenance becomes a small item



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It will pay you to find out more about how this cost-cutting material can make equipment turn out better quality yarn at lower cost. Do either of 2 things: (1) Write for Crucible's 32-page booklet, "Making the Most of Stainless Steels in the Textile Industry", or (2) Get in touch with your local Crucible representative. *Crucible Steel Company of America, Oliver Bldg., Mellon Sq., Pittsburgh 22, Pa.*

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## TWIST-SETTING NYLON

CONTINUED FROM PAGE 83

steam prior to the introduction of new steam.

Temperatures of 265 to 270° F. throughout the load are obtainable with this technique. The final vacuum serves to cool the yarn and helps to remove the moisture of condensation.

### Large Machines Can Be Used

When you use a larger autoclave, such as the Turbo FS-300 Fiber Setter or a Gaston County Hy-Vacuum pressure autoclave, these twist-setting principles still apply. The vacuum steam, and lag times will vary with the equipment and the load and need to be worked out on an individual basis at each installation.

In establishing the steam-vacuum cycle for any piece of equipment, thermocouples should be used to determine the temperature at the all-important center of the skeins or packages. Many external gauges do not record the temperature at the center of the yarn load.

Pressure-steam twist setting also offers the best method for setting yarns of stock-dyed staple.

---

## CARDING PRACTICES

CONTINUED FROM PAGE 97

size, and five different samples are tested so that 100 sq. ins. of web is checked. Weigh of stock is considered. Then the count is applied to this formula

$$\text{Neps per grain} = \frac{14.40 \text{ grains} \times \text{neps per 100 sq. ins.}}{\text{Grain weight of 1 yd. sliver}}$$

### Lap Waste Varies at Cards

The majority of mills reporting on lap waste at the cards said that from ¼ to ½ yd. should be pulled off at either end of the lap to prevent damage to the card. Some mills let the lap run completely out, and one mill tears off the last ½ in. Reports are:

**Mill A**—"We tear off ½ yd. and permit no laps to run out."

**Mill G**—"Waste from creeling laps should be very small. You should not have to discard more than 6 or 8 ins., and the lap should run out completely."

**Mill J**—"Our standard is ¼ yd. of waste at the beginning and ½ yd. at the tail end."

**Mill N-1**—"Card operators are in-



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# Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

## Controlling Brine Strength Automatically—with "Hydraulic Balance"

**Until recently,** controlling the strength of dilute salt brine required delicate, costly equipment, as well as maintenance by experienced personnel. Today, however, you can accurately regulate the strength of dilute brine by means of a system which is simple, rugged and economical—and requires no maintenance. This is the system of "Lixate Hydraulic Balance."* Just a few minor additions to a Lixate Brine-Making Installation will put this control system into operation.

**Only 2 basic pieces of equipment** are necessary in most cases: a brine storage tank and a Sterling Lixator. In the tank, there is a column of process brine (less than 100° S.). In the Lixator, there is a column of fully saturated brine. The Lixator is joined to the tank at the bottom by a small connecting pipe. Whenever the process brine is weakened, it is immediately—*and automatically*—brought back to its original strength by the entrance of fortifying brine through the connecting pipe.

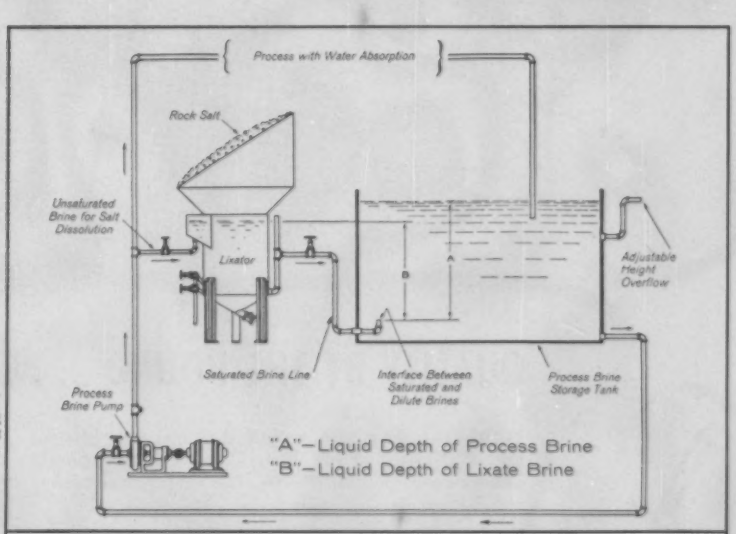
**Principle of "Lixate Hydraulic Balance."** The principle under which this system operates involves the hydraulic balance between the column of saturated fortifying brine and the column of process brine.

**For example:** you have a column of 70° S. process brine with a liquid depth of 10 ft. You have another column of 100%-saturated Lixate Brine 9.46 ft. in depth. These two columns are in hydraulic balance. In other words, even though they are connected by a small pipe near the bottom of the columns, there will be no flow from the Lixator brine supply into the process brine. The 70° S. brine will not change in strength. (The formula for determining the relative heights of the two brine columns is available from International.)

**"Lixate Hydraulic Balance" at work.** Suppose the process brine falls below 70° S. Even though the process column is still 10 ft. high, its specific gravity is lower. Hence, some of the 100%-saturated brine (of heavier specific gravity) will flow through the connecting pipe into the process brine.

The flow will continue until the process brine is restrengthened to its original 70° S., at which point the two columns will again be in hydraulic balance, and all flow from the stronger brine to the weaker will stop. Since this operation takes place *whenever* the process brine is weakened, the result is a process brine which varies so little from its original salometer reading as to be virtually constant in strength.

*Trademark. U.S. Patent 2,508,170, and Patents Pending.




**TYPICAL "LIXATE HYDRAULIC BALANCE" SYSTEM.** Fully saturated Lixate Brine from Lixator (at left) maintains original strength of dilute brine in tank.

**"Lixate Hydraulic Balance" is foolproof,** because of the basic behavior of two brines in contact with each other. It is known that the rate of diffusion between a strong and a weak brine is surprisingly slow, even over a large contact area. However, to reduce this diffusion to a negligible amount, the interface (area of contact between the brines) is purposely kept small. In many cases, a perforated shield is placed around the diffusion zone to further protect the interface. With this shield, the Lixate Brine and the process brine can be thoroughly mixed by agitation without causing excessive diffusion at the interface.

**Complete technical data available free.** There are many designs of storage tanks (if not already in existence in the plant), connecting pipes, interface protecting shields, as well as complete tables for determining the relative heights of process and fortifying brines. To get this comprehensive data for your plant needs, simply get in touch with International.

### TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like the assistance of an International "Salt Specialist" on any problem concerning salt or brine—or further information on the system of "Lixate Hydraulic Balance"—just contact your nearest International sales office.

**International Salt Co., Scranton, Pa.**

*Sales Offices:* Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa. and Richmond, Va.

FOR INDUSTRY, FARM, AND THE HOME—

STERLING SALT

PRODUCT OF INTERNATIONAL SALT CO., INC.

# QUALITY BY THE POUND . . .

**Whichever way you weigh it,** experience proves that National-Sterling Ring Travelers consistently deliver more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down.

**When you specify National,** you can be sure that each traveler in each box is completely uniform in weight, dimensions, temper and finish . . . carefully made to meet your exact spinning or twisting requirements. This means that, whether you're running synthetics, blends, or natural fibers, you can depend on every National Traveler for the finest possible performance.

**Try them and see!** Your nearby National-Sterling Engineer will be glad to recommend the right traveler for your particular operation. Call him now or write National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. Southern Office and Warehouse: P. O. Box 293, Gaffney, S. C.

**NATIONAL**
*Sterling*
**RING TRAVELERS**

F. L. CHASE, JR., Pres. & Treas. L. E. TAYLOR, So. Mgr.

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

***There's a NATIONAL man nearby!***

T. H. BALLARD, 112 N. 9th St., Belmont, N. C. • F. S. BEACHAM, P. O. Box 511, Honea Path, S. C. • H. A. CARTER, 354 Pine St., Pawtucket, R. I. • D. C. CREECH, P. O. Box 5083, High Pt., N. C. • H. D. LANIER, P. O. Box 421, Shawmut, Ala.

*Export Agent:* A. M. ROMERO CORP., 350 Fifth Ave., N. Y. 1, N. Y.

structed to discard the last ½ to ¾ in of lap."

**Mill V**—"We allow 1 yd. on the tail end of each lap."

### Other Topics Are Discussed

Other questions, not discussed in detail, covered mote-knife angle, picker beaters, and Super-Jet cleaners.

Mote knives, depending on mill conditions and stock being processed, are set at angles ranging from 10° to 30°.

Consensus was that two beaters in pickers do a better job of cleaning than three beaters, and stock suffers less damage.

Seven mills reported that they have been using Super-Jet cleaners for several years with satisfactory results. One mill reported that the cleaners should not handle over 750 lbs. of cotton per hour.

---

## DISRUPT COMMUNICATIONS

CONTINUED FROM PAGE 63

I hadn't kept too close track of him, but it did seem to me that he wasn't working out too well and maybe we ought to get rid of him.

"I didn't want to do anything hasty. So I sat down and dictated all my thoughts about it. Then I told the girl to send copies to all the people concerned. I wanted to get their opinions, too, before we made any move.

"Well, sir, that girl sent copies to the members of my immediate staff and to the man's boss, all right. But she also sent a copy to the man, himself, the one person I didn't want to see my memo.

"Of course we didn't have to do any more figuring about it. The young man quit cold the same day. Later on, I realized that a check with the others would have given a different picture; he was a valuable man doing a valuable job."

### It Should Be a Secret From Them

Last of the "other six people" is the man or woman you will take pains to keep from learning what's in your message. The contents are not about him or her but are of probable interest to them.

Two managers from the workshop group describe this roll well:

"My assistant and I often get together in my office after hours to talk things over privately. This is the time when the sweeper is cleaning out the unoccupied offices. We've learned to make it a point to look out-

# DISCOVERED!

## Many New Uses for

## ...Sulphonated Oils in textile processing

Ever-increasing uses of Jacques Wolf & Co. sulphonated fatty oils have made them more popular than ever before! These uses are being discovered daily by mills who now employ these versatile surface-active agents for imparting a soft full hand, plasticizing, scouring and lubricating in dyeing, finishing and other processing applications. Advanced methods of sulphonation have made them better than ever . . . their new uses have made them more valuable than ever. Check their amazing versatility soon! You, too, will be surprised!

Write for samples and further information on the complete line of sulphonated oils to Jacques Wolf & Co., leading sulphonator for over half a century.

**JACQUES WOLF & CO.**
*Chemicals* PASSAIC, N.J.

*Plants in:* Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.



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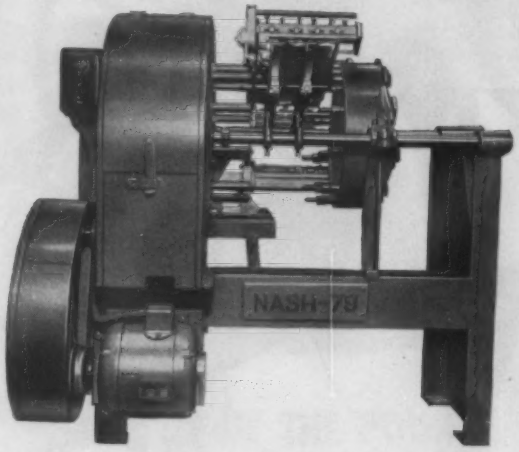
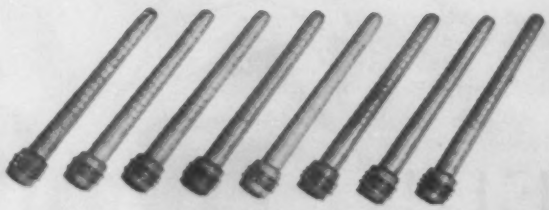
# NASH

"Number Seventy-Nine"



## The Only Machine That Cleans And Polishes Quills AUTOMATICALLY

Illustrated Bulletin Upon Request

ROUGH quills tear delicate filaments—increase production costs. Prevent broken picks with a NASH No. 79 Machine that polishes quills *automatically*. Standard equipment in leading textile mill operations.

SPECIAL FINISHING MACHINERY NASH SINCE 1890

J. M. NASH Company

2364 N. 30th Street • Milwaukee 10, Wisconsin


side my door to see where the sweeper is. We know from experience that what the sweeper hears soon gets all over the mill."

The method for handling those who can accidentally overhear is to decide who they probably are and then exercise the same precautions as you would with the sweeper. The procedure with those you would specifically exclude is to remain alert so that they do not "accidentally" overhear.

### The First Two People

You, the reader, might well say at this point: "Look here. You've given us cases of the other six people. How about a case or two to remind us of how the fellow who sends the message and the fellow who gets it can also be responsible for failure?"

Fair enough. From the same industrious group of textile men at Clemson House, here are examples:

• "I remember one time I was so busy I asked my assistant to send out notices of a meeting. Practically no one came to the meeting, figuring it wasn't very important. This was a case of the wrong man being the sender."

• "Yes. Like the time my personnel manager sent out a memo on a policy matter that certainly should have gone out over my name. I had quite a session with him about that. Another wrong sender."

• "Just once I had all the officers put their signatures on a notice. My boss phoned me from New York to ask if I was afraid to send it out by myself. That was too many people in the sender seat."

Here are illustrative cases at the other end of the message:

• "I'd been talking with Nolan—that's my assistant superintendent—about a problem on the slashers. I finally decided what I wanted to do; so I wrote Nolan a note about it. Within an hour both the superintendent and the overseer came in and asked why I didn't send the note to them. I guess Nolan was the wrong one to send it to, but I never have decided whether the department overseer or the superintendent would have been the right one."

• "I guess most of us have said something to the wrong person and have regretted it. Every time we bypass, that's what we're doing, of course. But I'm reminded of a comic-strip situation that happened to me.

"On the way to the mill one morning, I didn't stop soon enough at a red light and rammed the car ahead of me. Not hard, especially, but the young fellow in the car got out and cussed me up and down.

CONTINUED ON PAGE 172

# $CH_2Cl_2$

# METHYLENE CHLORIDE

At a time when this broadly useful intermediate and raw material is often in short supply, your records should show that Stauffer has huge and growing facilities for the manufacture of Methylene Chloride.

The Stauffer plant at Louisville supplies Methylene Chloride in drums of 600 pounds net capacity . . . in tank trucks . . . in tank cars of 4000, 8000 and 10,000 gallons . . . and in barges. Drum shipments are also made from warehouse stocks at Chicago, Houston, Akron, Cleveland, Pittsburgh, Boston, San Francisco, Los Angeles, Portland, Ore., and Niagara Falls.

Stauffer Methylene Chloride meets the highest standards of purity.

**Stauffer can also supply you with Carbon Bisulfide, Perchlorethylene, Trichlorethylene, Carbon Tetrachloride and Chloroform. A new brochure on Stauffer Chlorinated Solvents will shortly be ready for mailing. Kindly advise on your letterhead if you would care to have a copy.**

*stauffer means service*

**STAUFFER CHEMICAL COMPANY**

**380 Madison Avenue • New York 17, N. Y.**

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Stauffer CHEMICALS SINCE 1885



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*cotton yarn*

dyed by

**GLOBE**

***for trouble-free knitting and good color matches . .***

**Cotton yarns dyed by GLOBE are your assurance of bright, clear colors, good matches, and superior knitting qualities.**

***Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.***

***Yarns processed include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan — Dacron — Orlon.***

Globe DYE WORKS CO.
1865 1957

**4500 WORTH STREET PHILADELPHIA 24, PA.**

## DISRUPT COMMUNICATIONS

CONTINUED FROM PAGE 170

"Fifteen minutes later the same young fellow—a new salesman in the area—came into my office to show me his line of paper products. Man, was he embarrassed! He sure was convinced he'd latched onto the wrong target for his cussing. I felt so sorry for him I couldn't keep from laughing to break the strain. Ended up buying some cones from him, in fact."

### What To Do About It

The other six people, plus the first two, give you the full picture of the cast of characters important in communications. Happily, this is one of those rare instances where learning something doesn't mean you have to go into action. You don't have to do a thing except know there are eight roles people play in communications.

The knowledge itself protects you from making errors that have plagued you in the past. Now, whenever you communicate either in writing or by word of mouth, you are likely to take into account each of the eight people or groups of people. This will give you control. Never again need you be tripped up by the person you forgot or overlooked.

---

## SPINNING PROBLEMS

CONTINUED FROM PAGE 106

load excessively. Humidity was not changed in any of the mills. Reports are:

Mill C—"Hand-cleaning schedule was changed from 24 to 48 hrs. for wiping backs, steel plates, and lever screws. We clean base rails and run out thread guides once instead of twice a shift. No change was made in the schedule for cleaning creel boards or in sweeping."

Mill D—"Levers and thread boards, which formerly were cleaned every 8 hrs., are now cleaned every 24 hrs."

Mill H—"About one-third of our cleaning, except for sweeping, was eliminated."

Mill L—"Traveling cleaners with flexible cuffs eliminated about 75% of our hand cleaning on the frames. Sweeping is about the same."

### How To Prevent Tangled Yarn

Large-package spinning can cause tangled yarn at the spooler. A number of mills described methods they use to prevent or eliminate this trouble. All of the mills use a special



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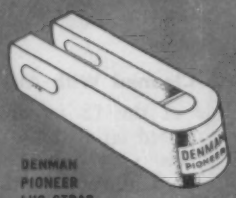
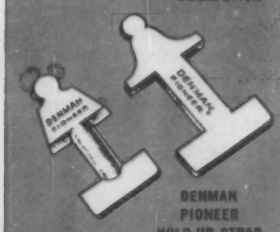
DENMAN PIONEER DROP BOX REVERSIBLE PICKER



DENMAN PIONEER LUG STRAP

DENMAN PIONEER SWEEPSTICK



DENMAN PIONEER HOLD-UP STRAP

DENMAN PIONEER SPINDLE ROD BUMPER

DENMAN PIONEER DOLL PICKER

DENMAN PIONEER BOBBIN STRIPPER BLADE

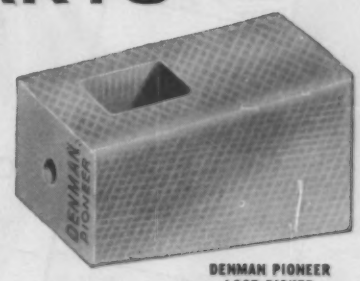
SPECIFY THE ORIGINAL

# Denman

## PIONEER LOOM PARTS

*Compounded For Smooth, Dependable Performance . . .*

*Longer Life And Greater Resistance To Shock!*



DENMAN PIONEER LOOP PICKER

For more than 20 years Original Denman Pioneer Loom Parts have set new standards for smooth, dependable performance. They are scientifically designed and moulded to absorb repeated loom shocks with little or no adjustment . . . need replacement only after longer-than-average service. To cut costs, step up production, specify Original Denman Pioneer Loom Parts . . . they are built for rugged use and a longer "prime of life"!

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Toledo Printweigh is now available on all Toledo Hi-Weigh Truck Scales . . . provides full figure printing for each 10 pounds from zero up to 50 tons! Records weights on tickets, strips or sheets. Avoids human errors. Big range of sizes to 60 feet. Two section, four section and axle load models. Ask your local Toledo office about them, or write for bulletin 2417. Toledo Scale Company, Toledo 13, Ohio.

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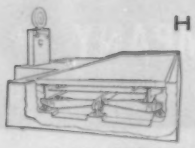

FLOOR AND TRUCK SCALES

WEIGHT PRINTING

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operator to clean up tangled yarns. Reports are:

**Mill I**—"Our spoolers are equipped with a blade just below the snick plate that automatically cuts the end from the warp bobbin when the cheese reaches maximum size. This action reduces tangling."

**Mill M**—"We reduced the yardage on the cheese from 30,000 to 29,500, which helps prevent tangles."

**Mill N**—"We are trying to correct our tangling problem by being more careful in setting detector fingers, springs, and spindles."

### Warpers Are Cleaned With Air

All but one of the 18 reporting mills use compressed air to blow off warpers and creels. One mill cleans them entirely by hand, and another uses cleaning fluid every week end. Reports are:

**Mill B**—"Warpers and creels are blown out at the doff."

**Mill G**—"We blow off warper, creels, ceiling, and lamp shades every 8 hrs."

**Mill I**—"We blow off warpers after each set of cheeses runs out. Once a week we clean creel chains and sprockets and remove lint from creel-bar rolls. Once a month we remove and clean the clutch assembly and check the brake-shoe facings. Every six months we remove the bottom drop-wire unit and clean the line."

**Mill M**—"We blow off the warpers and creels every two beams or each time the creel is changed."

**Mill Q**—"We do not use compressed air. Instead, we mop with loom dusters and brush with hand brooms every time a beam is warped."

**Mill X**—"We blow out warper creels once a week on the last shift."

---

### TURN SOCKS FASTER

CONTINUED FROM PAGE 71

of socks daily on this device.

Each sock is drawn on the form of the metal device, and the loose splicing threads slide down slots on either side of the form. A foot lever is pressed by the operator to press down a knife on either side of the form. This action cuts out the excess splicing threads.

A suction pipe removes the loose ends and drops them into a box close to the table where the socks are turned. A 3-hp. motor drives the fan that supplies the suction to remove the threads. The waste splicing threads are removed from the box at the end of each shift.



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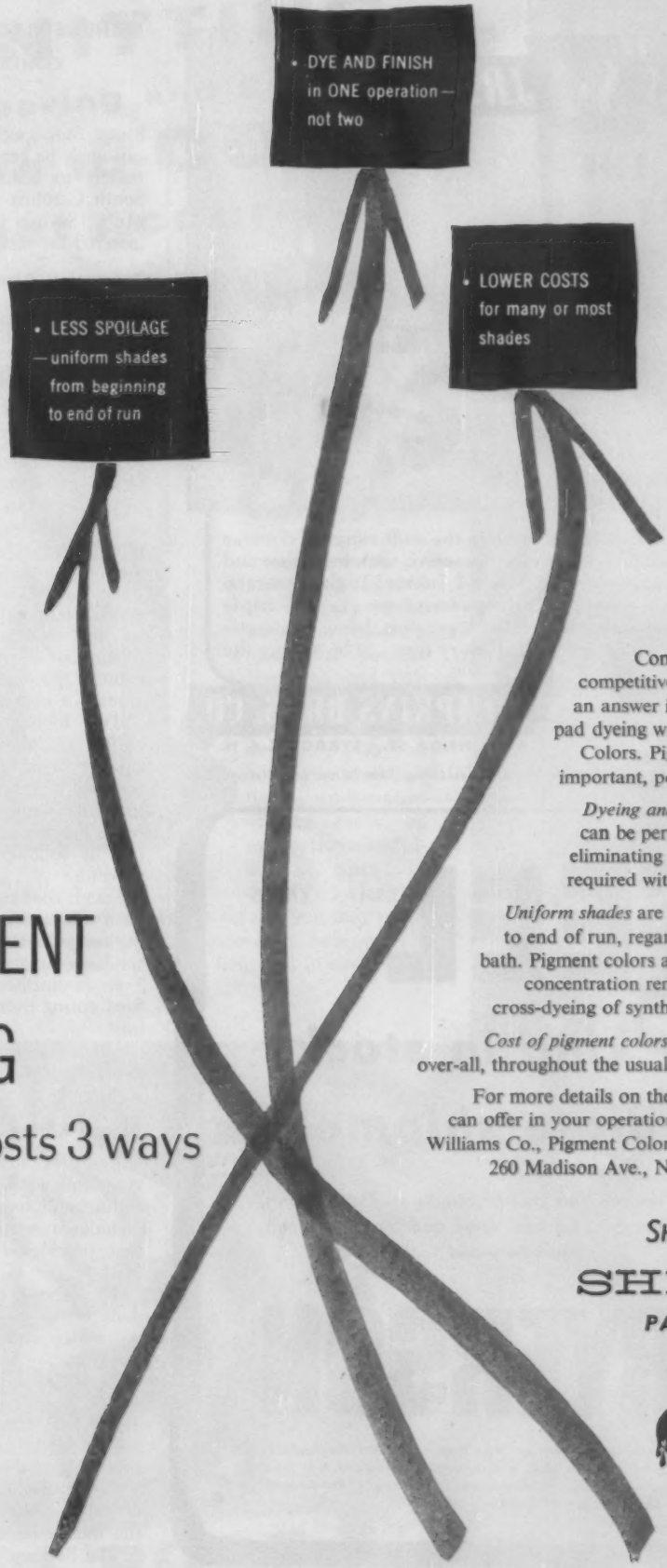
• DYE AND FINISH in ONE operation—not two
• LESS SPOILAGE —uniform shades from beginning to end of run
• LOWER COSTS for many or most shades

# PIGMENT DYEING

## can cut costs 3 ways

Concerned with getting more competitive in costs? Maybe there's an answer in more and better use of pad dyeing with SHERDYE® Pigment Colors. Pigment dyeing offers three important, possible ways to cut costs:

*Dyeing and finishing*, in most cases, can be performed in the same bath, eliminating an entire extra operation required with conventional dyestuffs.

*Uniform shades* are obtained from beginning to end of run, regardless of depletion of dye bath. Pigment colors are not substantive—bath concentration remains constant—need for cross-dyeing of synthetic blends is eliminated.

*Cost of pigment colors* themselves averages less over-all, throughout the usual complete line of shades.

For more details on the advantages SHERDYE can offer in your operations, contact The Sherwin-Williams Co., Pigment Color and Chemical Division, 260 Madison Ave., New York 16, New York.

SHERWIN-WILLIAMS

SHERDYE

PADDING COLORS



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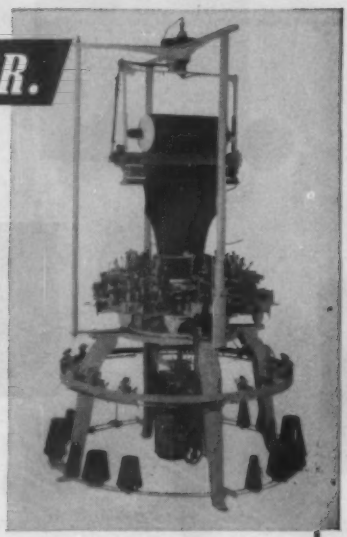
ALL NEW...

TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



*HERE'S A TYPICAL EXAMPLE...*

Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- NO IMPERFECTIONS
- NO BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

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*Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846*

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## BETHUNE BLEACHERY

CONTINUED FROM PAGE 93

leased four special trailer bodies that can easily be kept clean and uses these trailers to transport goods from its South Carolina mills to the finishing plant. Savings in labor and wrapping material are well worth while.

### Expansion Already Planned

Kendall is already looking to the future at its new plant. The east wall is constructed so that it can easily be removed to make way for further construction.

Maintenance shops, the laboratory, stores areas, the canteen, and locker rooms are centrally located to permit future expansion in three directions without relocation of these facilities.

Areas designated for major units of processing equipment are large enough in most cases to accommodate additional units and, in some cases, to double equipment capacity. Examples are the mercerizing, bleaching, and continuous dyeing ranges, each with enough space at one side to accommodate a companion unit.

Two high-speed can-tenter ranges are used as primary dryers. They are equipped with automatic temperature controls and are driven by variable-speed d.c. motors. Space for another range has been provided. This same idea is followed with the finishing ranges.

Starch cooking for finishing is done on a mezzanine floor over the finishing range so that the finishes flow to the pads by gravity.

Resin finishes are cured in a gas-fired curing oven set up as a separate unit.

Other finishing equipment includes swing tenters, friction calenders, and a 90-in.-face can range.

### Bleach Range Paces Production

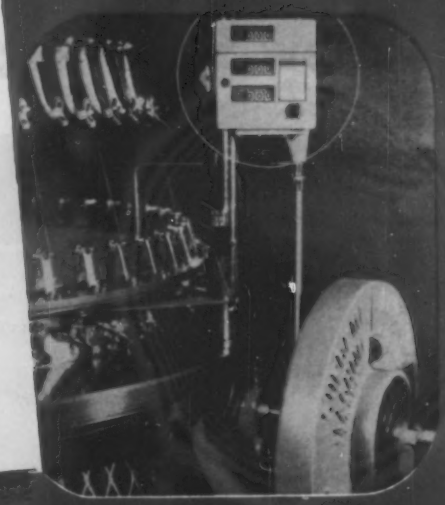
Kendall's continuous bleaching range follows the latest trend in preparatory equipment. The scouring stage includes a saturator, pad, and J-box that provides a reduction period of 212° F. for 45 mins.

The actual peroxide bleaching is done in the second stage of the process, which also has a saturator, pad, and J-box. After leaving the J-box the cloth is washed free of chemicals and delivered to white bins lined with glazed tile. Each bin will carry 9,000 lbs. of cloth. Automatic pilers distribute the fabric evenly in the bins.

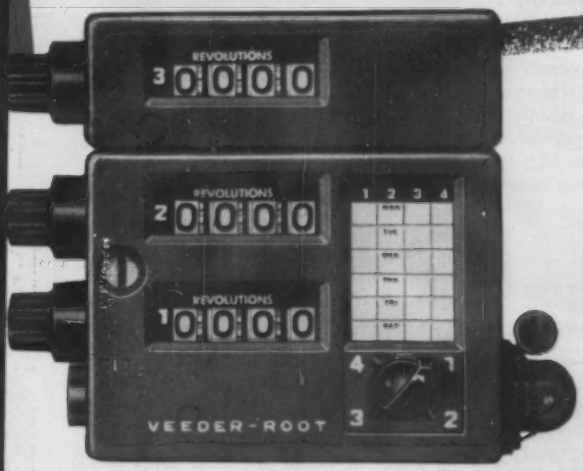
Goods may be routed from the bins directly to the primary dryers or to the mercerizer as required.

The Bethune plant processes Curity

# In KNITTING
## (as in Weaving and Spinning)
# you have to COUNT
## to get Accurate
# COUNTROL of
## Production and Costs



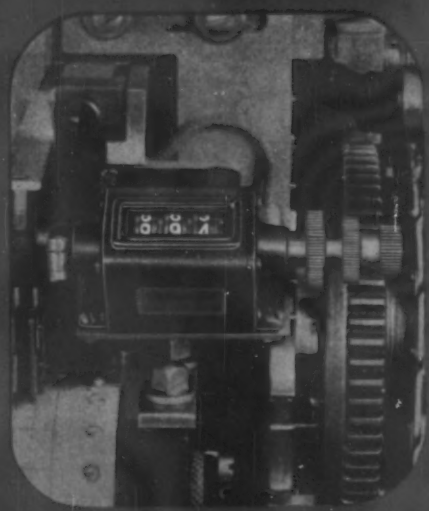
3-shift Revolution Counter on Supreme Knitting Machine.



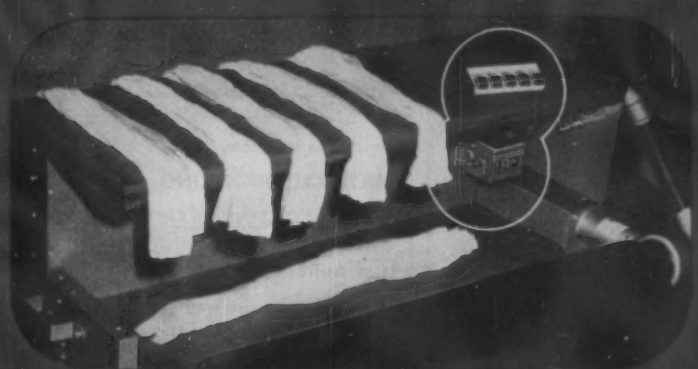

3-Shift Revolution Counter.

Every knitting machine . . . in fact, every process in every knitting mill . . . needs to be under a modern system of Veeder-Root *Countrol*. This system can be shaped to your own needs . . . so you will have a continuous, up-to-the-minute check on production scheduling . . . costs . . . quality . . . lengths . . . over-runs . . . shortages . . . and any other facts in figures you may need.

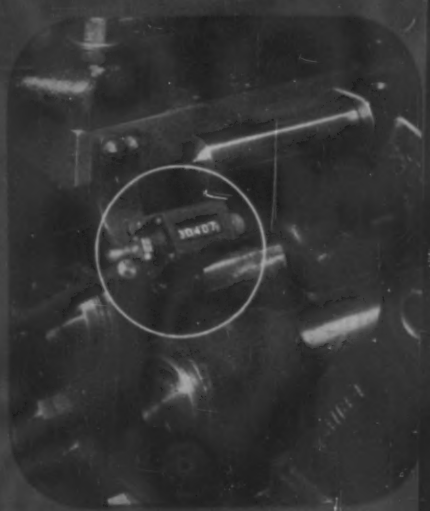
Remember, paperwork doesn't mean a thing, *unless you have accurate Countrol*. And you can count on Veeder-Root to help you in every possible way. Write:



Small Subtractive Predetermining Counter on Philadelphia Jacquard Knitting Machine.



Vary Tally and Large-Figure Hosiery Dozens Counter on Specialty Mfg. Company's "Inspectomatic" Table.



Small Reset Ratchet Counter on Textile Machine Works' full-fashioned hosiery machine.

# VEEDER-ROOT

"The Name that Counts"

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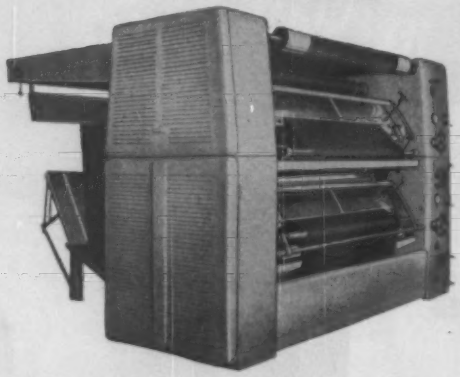
# New Shearing Machine Has Stationary Shear Cylinders



**Provides Accurate Shearing Close to Seams**

In the new Vollenweider Shearing Machine the shear cylinders remain stationary – rigidly connected to the machine frame. Height adjustment is made by lowering or lifting the **shearing beds.** As a result you get much more accurate control of shearing height and quality – plus a shearing operation entirely free from play and vibration. Shearing height is adjustable to an accuracy of .004". The two shears are mounted vertically so that entire process can be controlled and observed from one position. Shearing extremely close to seams is aided by automatic machine slow down as seams approach the shear. Stepless adjustments permit cloth speeds from 16.5 to 195 ft./min., and shearing cylinder speeds from 500 to 1500 rpm. Standard machines accept maximum widths up to 63 and 78 inches.

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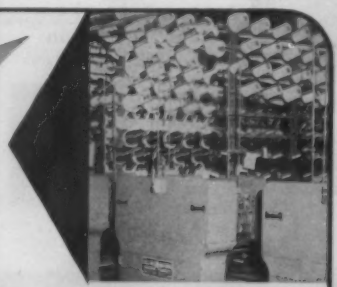
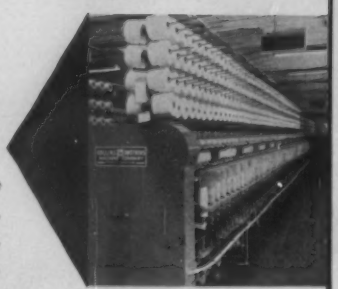
**There is a Collins Twister for every Ply Yarn Construction**





Collins produces the most complete line of twisters on the market . . . Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Single or Dual Drive, and Special Twister Take-ups.

Since 1866 Collins Twisters have been the finest in the field. Today's line offers you many valuable exclusive features. Let us give you full information on the machines you need.

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Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Canada


gauze diapers, Kendall dish towels, and industrial and interlining fabrics marketed under the Kendall name, as well as other specialty fabrics that are sold to garment manufacturers. Examples of these Kendall specialties are Perx, a synthetic hair cloth that is resilient in one direction and soft in the other; Clex, a fusible interlining; and Canvex, a coat-front interlining.

The Bethune plant also produces consumer fabrics in a range of colors and in plain and crease-resistant finishes.

---

## ROUND TABLE

CONTINUED FROM PAGE 12

can handle it by following well-defined instructions or (2) changing circumstances have reduced the importance of a particular duty to such an extent that it no longer calls for more than middle-management supervision.

Top management best serves the mill when it devotes full time to urgent or essential duties affecting broad phases of operation. What falls into this classification is subject to change from month to month. The real problem consists in determining the tasks that have become marginal and passing them down to the next level of supervision.

Attempting to hold too tight a check on all responsibility is not only a waste of mill-management's capabilities but also robs others of the opportunity to grow in prestige by shutting off semi-important duties for which middle management should be accountable.

GEORGE M. DOBSON
Harrisburg, Pa.

---

## MATERIALS-HANDLING SHOW

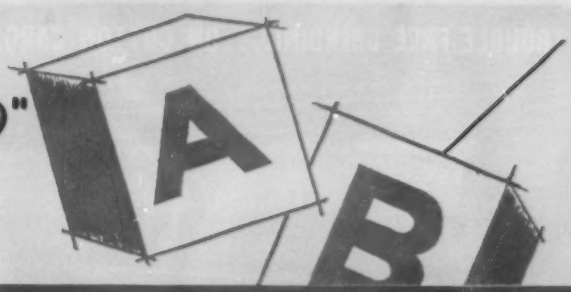
CONTINUED FROM PAGE 81

### Hydraulic Dumper

A hydraulic dumper for drums, vat boxes, box trucks, and specially-shaped containers was featured by Uhrden, Inc., Dennison, Ohio. The dumper has a load capacity of 2,000 lbs., elevates to a height of 60 ins., and is powered by a 110-v. electric source or a 12-v. battery. **(A-52)**

CONTINUED ON PAGE 180

# Tops in "CONTROLLED" Air Cylinder Power




# The BELLOWS AIR MOTOR

*The full story is yours for the asking—*

**Write for this free new booklet. Bulletin BM-25 gives detailed data and specifications that will enable you to decide for yourself how Bellows Air Motors will save you time and money.**

**Address Dept. TW-757, The Bellows Co., Akron 9, Ohio.**

**In Canada: Bellows Pneumatic Devices of Canada, Ltd., Toronto, Ont.**

It's as simple as ABC — "control" is the essential difference that makes Bellows Air Motors do a better job at lower cost than conventional air cylinders.

In Bellows Air Motors control is an *integral part of* the air cylinder. There are no extra valves to buy — no complicated and cumbersome piping to install. The Bellows Air Motor is a complete power unit in itself.

***What does it mean in terms of***

- **BETTER PERFORMANCE?**
- **GREATER ECONOMY?**

It means instant action. The moment you shift the valve (either electrically or mechanically) the piston responds. No hesitancy — no chatter — no delay. It means simpler installation, easier interlock; "Controlled-Air-Power" fits in naturally with related machine movements. It means lower installed cost — lower maintenance costs.

618-B

## The Bellows Co.

**AKRON 9, OHIO**



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NEW ALUMAROY DRUM GRINDERS

B. S. Roy's latest development . . . an aluminum alloy drum grinder . . . weighs only half that of steel or cast iron models.

This lightweight grinding roll eliminates springing of the top flats caused by the heavier drums and assures even, perfect grinding over the entire surface of each working flat.

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SPECIALIZED ENGINEERING
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MACHINE CO., INC.
2231 E. Ontario Street
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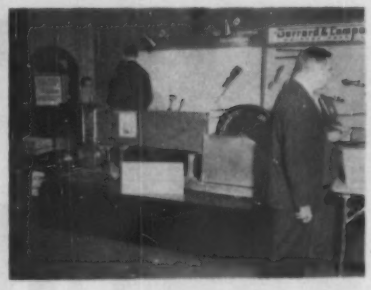
## MATERIALS-HANDLING SHOW

CONTINUED FROM PAGE 178



### Automatic Strapper

A fully automatic strapping machine, Autobinder, was demonstrated by A. J. Gerrard & Co., Melrose Park, Ill.

The machine straps open wooden crates, cleated boxes, wooden boxes, corrugated cartons, and bundles. It straps packages interchangeably without adjustments. (A-53)

### Warehouse Storage System

Several storage-rack systems to give maximum warehouse space were featured by Warehouse Storage Systems Co., Hatfield, Pa. With the system, you can stack right up to the ceiling. (A-54)

### Portable Conveyor

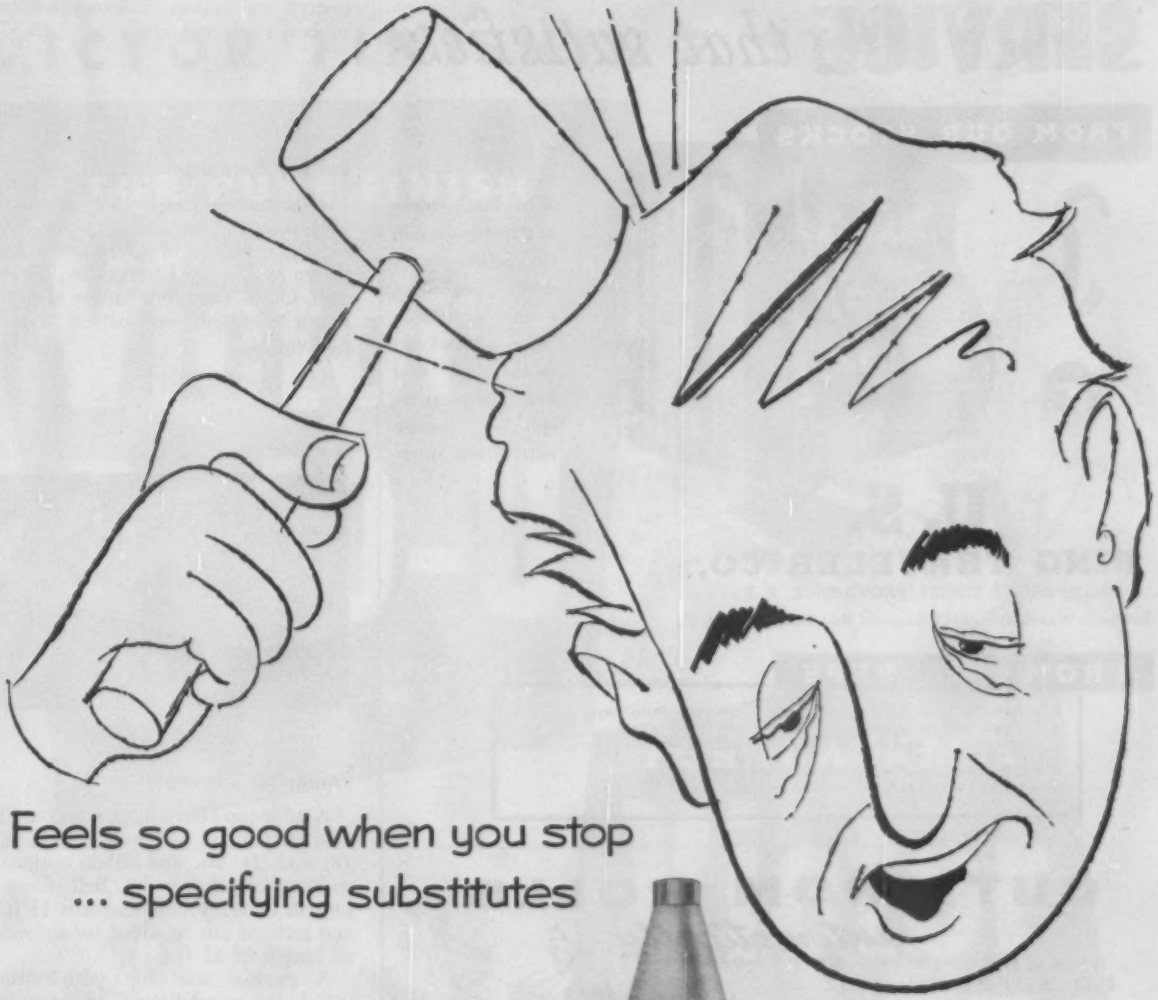
Portable conveyors with rollers or wheels were featured by E. W. Buschman Co., Cincinnati, Ohio. The conveyors come in curved and straight sections easy to set up. Stations with three-way switches are also furnished. (A-55)

### Extension Conveyor

A conveyor only 10 ft. long that can be extended to 40 ft. was introduced by Wilkie Co., Philadelphia, Pa. The conveyor is for loading and unloading boxcars and trucks. (A-56)

### Casters

A line of casters and wheels for light to heavy duty was shown by Divine Bros. Co., Utica, N. Y. The

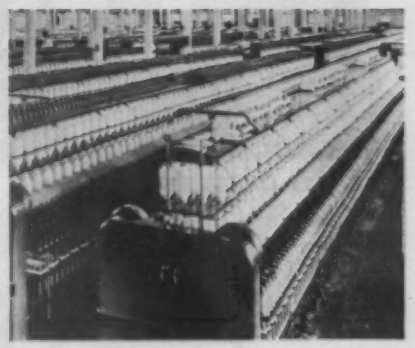


Feels so good when you stop
... specifying substitutes

Are ends down and loss of production causing spinning room headaches? Then it will pay you to find out why smart textile men specify SKF-Equipped Spindles... why they will not accept a substitute... why there are more than 40 million SKF-Equipped Spindles in operation in the world today.

It's a known fact that the built-in dependability of these high quality SKF products minimize costly shut-down and steps up both quality and production of yarn.

Insist on SKF Roller Bearing-Equipped Spindles for your mill—the only anti-friction bolster that has served the industry for over a quarter of a century. 7785



EVERY TYPE—EVERY USE

SKF®

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- *Cylindrical Roller Bearings*
- *Spherical Roller Bearings*
- *Tapered Roller Bearings* ("Tyson")

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**RING TRAVELER CO.**
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L. H. MELLOR, JR.—Mid-Atlantic States—123 Tready Rd.—Drexel Hill, Pa.—Phone Hilltop 6-1563
H. R. FISHER—Concord, N. C.—Box 83—Phone 2-8930
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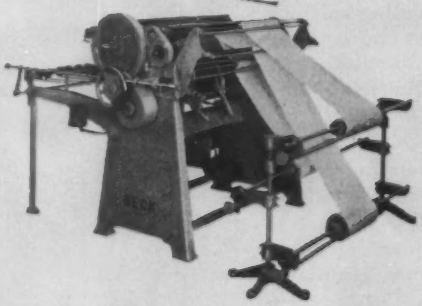
# CUT FROM ROLLS
*automatically*

no spreading...
no hand cutting
with

**BECK**
AUTOMATIC
ROLL SHEET
CUTTER



Save time—automatically. You can with this modern versatile machine. It cuts just about any textile or synthetic from rolls to sheets—accurately, speedily and with greatly reduced waste. Let's show *you* how inexpensive it is to own and operate a Beck Automatic Roll Sheet Cutter. A brief letter from you is all it takes. Write.

CHARLES BECK MACHINE CORPORATION
50 CHURCH ROAD, KING OF PRUSSIA, PA.


casters are canvas, Formica-molded, rubber, steel, and iron. (A-57)

### Battery Recharger

A battery recharger that automatically matches the charging curve to the voltage curve of your battery was shown by Lincoln Electric Co., Cleveland, Ohio. Therefore danger of heating is removed, and battery life is prolonged. (A-58)

### Table-Top Conveyor

A table-top conveyor-belt unit available in standard belt widths of 8, 12, 18, and 24 ins. and other optional widths was shown by Belt Corp., Orient, Ohio. Frame length is 11 ft., and sections can be added for an overall length of 81 ft.

A manual start-stop push-button switch for one-direction operation is furnished as standard equipment. Other switches are available for two-direction manual operation and remote control. (A-59)

### Exhaust Purifiers

Exhaust purifiers for engines powered with leaded gasoline were shown by Oxy-Catalyst, Inc., Wayne, Pa. Other purifiers are for diesel engines and liquid-petroleum engines. (A-60)

### Aluminum Flooring

High-strength lightweight aluminum flooring for factories was shown by Hercules Flooring Co., New York, N. Y. The material is furnished in 12-in.-square plates to be imbedded in concrete. (A-61)

# VICTOR FINISHING STARCHES

FOR PURE FINISH

## Victor P-40-U

SMOOTHER HAND
BRIGHTER SHADES AND WHITES

FOR BACKFILL

## Victor 10-55

MORE MELLOW HAND
ALWAYS UNIFORM • CARRIES MORE TALC

*Charles C. Switzer, Vice President*
**TEXTILE SALES DIVISION**
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GREENVILLE, SOUTH CAROLINA

**THE KEEVER STARCH COMPANY**
**GENERAL OFFICES-COLUMBUS, OHIO**
Processors of corn, wheat and blended starches for industry since 1898



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# BALE BREAKERS

for

SISAL

JUTE

COTTON LINTERS

BAGASSE

STRAW

Taylor-Stiles Bale Breakers easily loosen hard packed Sisal, Cotton Linters, Jute, Bagasse and Straw in a matter of *seconds*.

One man now opens a 400 lb. bale of jute in *8 seconds*. Formerly, using hand methods, this job required 7 men!

Use coupon below for descriptive folder stating material to be opened.

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Send me folders 206 and 207 with description of Taylor Stiles Long and Short Fiber Bale Breakers.

NAME .....

COMPANY .....

ADDRESS .....

CITY .....STATE





CONTINUED FROM PAGE 132


## Yarn Lubricant

An oil developed especially to lubricate nylon yarns used in seamless knitting machines has been marketed by H. C. Harding, Inc., Second & Tilghman Sts., Philadelphia 22, Pa. Called Stat-O-Lene, the oil provides lubrication and cuts down static developed in knitting all synthetics yarns.

**Circle T-28 on Reader-Service Card**

## Acrylonitrile Latex

Chemigum 247 is a medium acrylonitrile resin announced by Goodyear Tire & Rubber Co., Inc., Akron 16, Ohio. The latex has improved resistance to discoloration by heat and light and can be compounded easily with pigments and extenders. The product is suggested for carpet backing, nonwoven fabrics, slashing, and other applications.

**Circle T-29 on Reader-Service Card**

## Rolling Machine

An overfeeding calender machine for rolling tubular textile fabrics has been developed by Edward S. Beard, P.O. Box 322, Spring City, Pa.

The machine will not pull or distort the wales in the fabric, and it will roll all types of tubular knit goods.

**Circle T-30 on Reader-Service Card**

## Pattern Tufting Machine

A controlled-needle tufting machine for bath mats and bath sets is being manufactured by Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn. The machine is being built only in 3/8-in. gauge 30 ins. wide.

The machine has a two-needle control, and the pattern is made by putting in or leaving out tufts.

A light tufted fabric of either cut pile or loop pile can be run through this machine with an overlay design on a low ground fabric. This machine feature eliminates the present hand-overlaying operations. In addition, yarn is saved because the pattern can be left out entirely where it isn't needed, for example, in areas outside the ends of oval rugs or commode cov-


# YARN CUTTERS

for

THREAD WASTE

CONTINUOUS FILAMENT

GLASS YARN & FIBER

FLOCKS

STAPLE

Taylor-Stiles Yarn Cutters cut nylon and other synthetics without fusing. Also used for cotton, wool and other fibres.

The Thread Waste Cutters cut large volume of tangled waste without jamming or fusing.

The Staple Cutters take synthetic or natural fibres in filament or tow form and cut them from 1/4th inch to 12 inches long by change of sprockets or by vari speed motors or both.

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TAYLOR-STILES & CO.
15 Bridge St., Riegelsville, New Jersey

Send me folder No. 201 with illustration and description of Taylor-Stiles Yarn Cutters.

NAME .....

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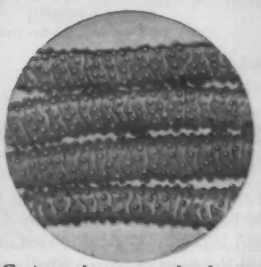
# SYTON controls interfiber drag, lets you spin finer yarns

Friction?
YES!

Tackiness?
NO!



Syton is an odorless, translucent, pH-stable silica sol for use alone or with other finishes. It deposits on fibers in millions of submicroscopic particles. They hold fibers in place, enable you to spin lighter, finer counts from coarser fibers.

*Syton: Reg. U. S. Pat. Off.*

***Here are more advantages you get with Syton:***

- Fast, easy carding
- Less twist for the same strength
- Fewer ends down
- More uniform, condensed rovings
- Higher spinning speeds
- Increased tensile strength
- Improves processing of 100% synthetic fibers and blends

You'd be interested in "Profitable Spinning of Wool and Wool Blends with Syton." It gives the full story—technical data, illustrations, case histories. Phone the local Monsanto representative now, or write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, 710 North Twelfth Blvd., St. Louis 1, Missouri.

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CHEMICALS—PLASTICS

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**NOW . . . see, try, compare the all-new ORDNANCE OTSA 32", 32-feed high production model for Jersey fabrics**

OGA
OTA
OTSA

●NOW . . . ORDNANCE brings you a major improvement in circular fully automatic knitting machines — the new OTSA 32" model with 32 FEEDS! For *really* fast output of top quality Jersey with 1" x 1" rib border here is an incomparable production unit . . . the answer to low unit cost, top operating profit. Check *many* exclusive features such as 2-speed drive, high speed (15 RPM), simplicity and accessibility of all removable and replaceable assemblies, and replaceable forecut walls on both cylinder and dial.

Sales Representative
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CIRCULAR FULLY AUTOMATIC KNITTING MACHINES

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MECHANICAL SEAL
*Does the Job!*

The precision mechanical seal of the Rotary Union stays right long after other joints are leaking — without adjustments or mechanical maintenance. Saves on fluids and gases — on parts — and on maintenance labor. There is a Rotary Union for every rotating joint application in pipe sizes from ¼" through 3" and in 40 types and sizes. For full information contact our nearest office or write for Bulletin 700W

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ers or in cut-out areas of rugs that encircle commodes.

Machine production is expected to be 600 linear yards per 8 hrs. of operation.

**Circle T-31 on Reader-Service Card**

## Yarn Splicing Compound

A latex splicing compound, Vulcanol adhesive, AL-1005, has been announced by Alco Oil & Chemical Corp., Trenton Ave. & William St., Philadelphia, Pa. The compound is used for splicing nylon, acetate, Acrilan, viscose, cotton, and wool carpet yarns.

Splices made with the adhesive need not be more than ⅜ in. long and do not add to the diameter of the yarn. The splice is strong enough to withstand the tensions ordinarily encountered by carpet yarns in process.

**Circle T-32 on Reader-Service Card**

## Fabric Adhesive

An adhesive developed especially for joining fabrics and other porous materials has been announced by Adhesives Dept., Raybestos-Manhattan, Inc., Bridgeport 2, Conn.

The adhesive is strong enough to permit joining the ends of material without lapping. It has a tensile strength in holding canvas to canvas of 104 psi. after 10 mins. and 112 psi after 24 hrs.

**Circle T-33 on Reader-Service Card**

## Stand for Power Vise

A portable power-vise stand for cutting, reaming, and turning on fittings is being manufactured by Oster Mfg. Co., 2057 E. 61st Pl., Cleveland 3, Ohio. A power drive for threading pipe is also furnished with the stand.

**Circle T-34 on Reader-Service Card**

## Motor Controller

An electrical braking controller that almost instantly stops production machines is being produced by Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa. The controller is especially suitable for use on textile machines that tend to coast during the normal braking period, which wastes yarn. The mechanism is enclosed in a

he's working for you

THIS FELLOW IS TRAINED IN YOUR BUSINESS. His main duty is to travel the country — and world — penetrating the plants, laboratories and management councils . . . reporting back to you every significant innovation in technology, selling tactics, management strategy. He functions as your all-seeing, all-hearing, all-reporting business communications system.

THE MAN WE MEAN IS A COMPOSITE of the editorial staff of this magazine. For, obviously, no one individual could ever accomplish such a vast business news job. It's the result of many qualified men of diversified and specialized talents.

AND, THERE'S ANOTHER SIDE TO THIS "COMPOSITE MAN," another complete news service which complements the editorial section of this magazine — the advertising pages. It's been said that in a business publication the editorial pages tell "how they do it"—"they" being all the industry's front line of innovators and improvers—and the advertising pages tell "with what." Each issue unfolds an industrial exposition before you — giving a ready panorama of up-to-date tools, materials, equipment.

SUCH A "MAN" IS ON YOUR PAYROLL. Be sure to "listen" regularly and carefully to the practical business information he gathers.

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fast true pipe cuts on your power drive

Rolls are twice the usual width, double the bearing surface on pipe—sure straight start of cut . . . by hand or power drive—extra fast and easy. Pays you to see it before you buy your next cutter—at your Supply House.

No. 201, ⅛″ to 1¼″
No. 202, ¼″ to 2″

The Ridge Tool Company, Elyria, Ohio, U.S.A.

RIDGID
Work-Saver Pipe Tools




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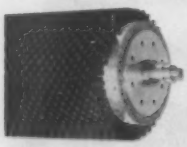
# YEARS
## OF SATISFACTORY MILL SERVICE WITH JENKINS' METLKOR BRUSHES

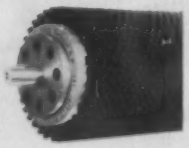
BRVM Motorized HERMAS Model Vertical Brushing Machine

"The high quality standards set by our engineering department for brushes used in our machines are amply covered by Jenkins' METLKOR Brushes. They have stood years of satisfactory mill service for our customers and, of course, for us," stated Mr. Robert Simpson, Sales Representative of Hermas Division, Curtis and Marble Machine Company. Hermas has proven the efficiency of Jenkins' METLKORS — the long lasting brush that can be rebristled. If you have any standard or special brush problems, write us today



METLKOR brush used in Hermas Brushing Machine: precision made, accurately balanced. Filled with efficient long life Dupont "Tynex" Nylon. Available in fibre, hog bristle, etc.

METLKOR brush used in Hermas Shearing Machine: tufted construction, ruggedly built, refillable when worn. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc.



METLKOR brush used in Hermas Beaming, Measuring and Brushing Machine: light weight, for long trouble free life. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc.

**Specify Jenkins' METLKOR the original . . . the best *Metal Core* brush**

**METLKOR®**
**CYLINDER BRUSHES**
and **LIFEWOOD®** WOOD BACKED BRUSHES

**M. W. JENKINS' SONS, INC.**
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compact container. No special motors, shaft extensions, mechanical braking devices, or special windings are required. There are no moving parts to wear, no solenoid hum, and no possibility of the motor reversing. The controller can be used on any standard motor.

**Circle T-35 on Reader-Service Card**

### Transfer Files

Steel transfer files with nylon glide bearings for smooth, quiet drawer operation are announced by Dolin Metal Products, Inc., 315 Lexington Ave., Brooklyn 16, N. Y.

**Circle T-36 on Reader-Service Card**

### Coupling Link for Chains

A coupling link for chains is available from Columbus McKinnon Chain Corp., Fremont Ave., Tonawanda, N. Y. The link is for adding hooks and additional chains to hoists and similar applications. The pin for the link locks the two parts together without peening or welding. Consequently, the link is easily removed when necessary.

**Circle T-37 on Reader-Service Card**

### Portable Scaffold

Lightweight, low-cost, easily moved scaffolding is being manufactured by Waco Mfg. Co., 3555 Wooddale Ave., Minneapolis 26, Minn. A section of scaffold 4 ft. high, 4 ft. wide, and 7 ft. long consists of only four parts. Frames and braces are made of high-carbon-steel tubing.

**Circle T-38 on Reader-Service Card**

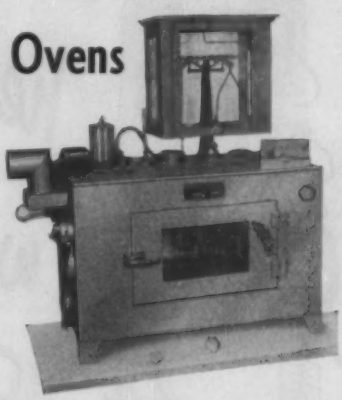
### Bin-Level Indicators

A series of units adapted to detecting the level of materials in chutes, bins, conveyor systems, or cyclone separators has been developed by Convair, Pittsburgh 25, Pa. The indicator consists of a four-blade paddle mounted on a shaft that extends into the bin. A motor attached to the shaft revolves the paddle until material in the bin impedes the paddle; then a torsion spring builds up energy to switch off the motor and operate signal devices.

**Circle T-39 on Reader-Service Card**

CONTINUED ON PAGE 193


## Textile Testing Ovens



**EMERSON OVENS**

For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 baskets 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights, and automatic temperature control. Table space 20" x 40".

Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.

**EMERSON APPARATUS CO.**
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*Out Goes*
**LINT · FLY TRASH**
*from your*
**SPINNING FRAMES and ROVING FRAMES**
***Quickly • Economically***

*by using*

**M·B AMOSKEAG PNEUMATIC ROLL PICKER**

**MODEL A-VT-A**

A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.

***Write for Literature***

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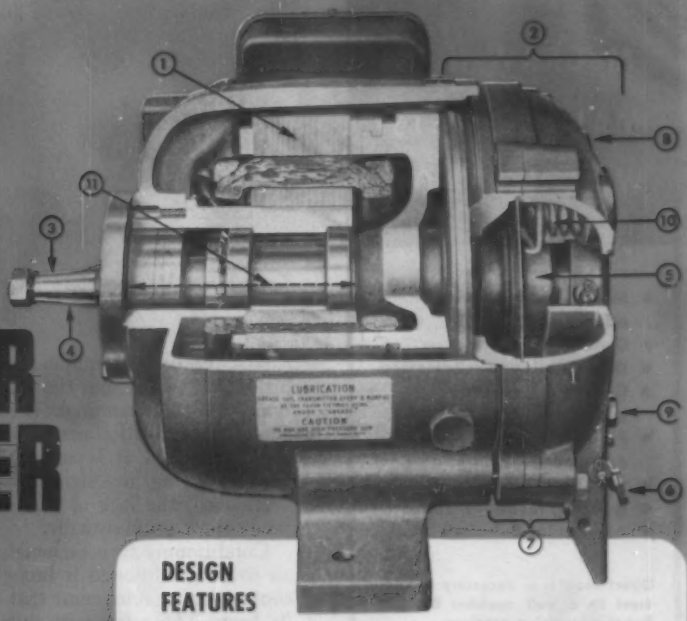
# THE DEPENDABLE DIEHL

# "BA" POWER TRANSMITTER

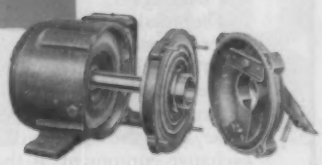
## For Draper Looms

*Exclusive new design features mean . . . consistent quality production . . . peak operating efficiency . . . minimum maintenance, labor and costs!*



**STREAMLINED FRAME**
Easy to clean. Roomy terminal box.

**KINETIC BRAKING ACTION**
(See Feature 6)



**CLUTCH-ACTUATING BEARING**—A strikingly new and improved method of mounting. (See Feature 5)

**CLUTCH-BRAKE ASSEMBLY**—Improved, simplified. Readily removable as a unit. (See Feature 2)

### DESIGN FEATURES

*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

*plus these outstanding Features*

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamperproof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

** Exclusive feature—patent protected.*

The original and only loom power transmitter . . . plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

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## Treating Water To Prevent Air-Conditioning Trouble

Air-conditioning equipment requires little maintenance, but the little attention required is essential. Although a neglected installation may run through a whole season and part of another without giving any sign it has been overlooked, the lack of care will certainly show up eventually.

Conditioning air is exchanging heat; air to be conditioned is brought into contact with a refrigerant that absorbs its heat. The refrigerant then passes the absorbed heat along to another cooling element, which is frequently water. The cycle repeats itself over and over again.

The final cooling action given by water is essential to the operation. But unfortunately, water also gives unwanted elements to the air-conditioning system. The undesirable side of water, from the standpoint of any heat-exchange equipment, is that it usually introduces scale, slime, and corrosion.

### There Is No Pure Water

There is no such thing as naturally pure water—even as it falls as rain, it contains dissolved dust and gases. When it reaches the earth where it flows through rock strata and natural drainage contours, it dissolves something of almost everything it touches and is therefore not pure.

Among the impurities collected by water are calcium and magnesium salts. These salts cause trouble in the air-conditioning system by settling out of the water and depositing as scale on the surfaces of the equipment.

In addition to calcium and magnesium salts, water also brings bacteria that feed on organic particles removed from the air. Then slime is deposited on the equipment. Like scale, slime interferes with good heat transfer and impedes the flow of water and air.

### What Causes Corrosion?

Corrosion is formed naturally when water that is acidic (pH of less than seven) comes in contact with metal in the presence of air.

These deposits, singly or collectively, are capable of preventing an air-conditioning unit from operating at the efficiency rate intended by the manufacturer. And if they are allowed to collect in the system indefinitely, a complete breakdown results.

Since some kind of maintenance is mandatory, it's better to prevent scale, slime, and corrosion than to remove it. Treating the water employed in air-conditioning systems prevents the formation of these deposits. In addition to being simple, this conditioning procedure is effective and inexpensive. It requires neither technical knowledge nor expensive proportioning equipment.

### Treatment Helps Three Ways

Proper water-conditioning treatment performs three functions: it (1) separates calcium and magnesium salts to prevent the formation of scale, (2) inhibits slime formation and creates an alkaline atmosphere in water, and (3) minimizes the chance of corrosion.

A water-conditioning agent should be fed to the water at the rate of 2 to 4 lbs. per 1,000 gals. Normally this concentration raises the water's pH to between eight and nine. The pH can be checked easily and quickly by noting color changes on pH papers.

Where water has a lot of acid, it may be necessary to use a supplementary form of alkalinity to bring the pH of the water to eight. The pH of enclosed systems should be checked periodically; a drop below eight indicates the need for upkeep material.

### Control for Open Systems

Open systems that take in make-up water continually require slightly more-rigid control. When it is impossible to break down water losses into loss by evaporation, wind, leakage, and blow-downs, all incoming water should be treated at the regular rate of 2 to 4 lbs. of conditioner per 1,000 gals. of water.

If the percentage of loss through evaporation is known, then it is only necessary to treat water to replace that lost by wind, leakage, and blow-downs; the conditioner material in the water that evaporates remains in the system.

Once a system has become loaded

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# DYES FOR ORLON*

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Sweaters are a necessity in the wardrobes of the younger set. The more colorful, the better. With GDC's Genacryl® dyes, you can match the popular shades shown here or create trend-setting new ones on Orlon, other acrylics, and wool-acrylic mixtures.

Water-soluble Genacryl dyes, a new form of the basic type, are applied directly to the fabric in the presence of acetic acid without numerous complex procedures. Their high tinctorial strength makes possible economical production of bright, full shades that are level and well penetrated. These colors have very good fastness to light, dry-cleaning, perspiration, rubbing and washing.

Write or call our nearest sales office for further information about color-matching formulations and application methods.

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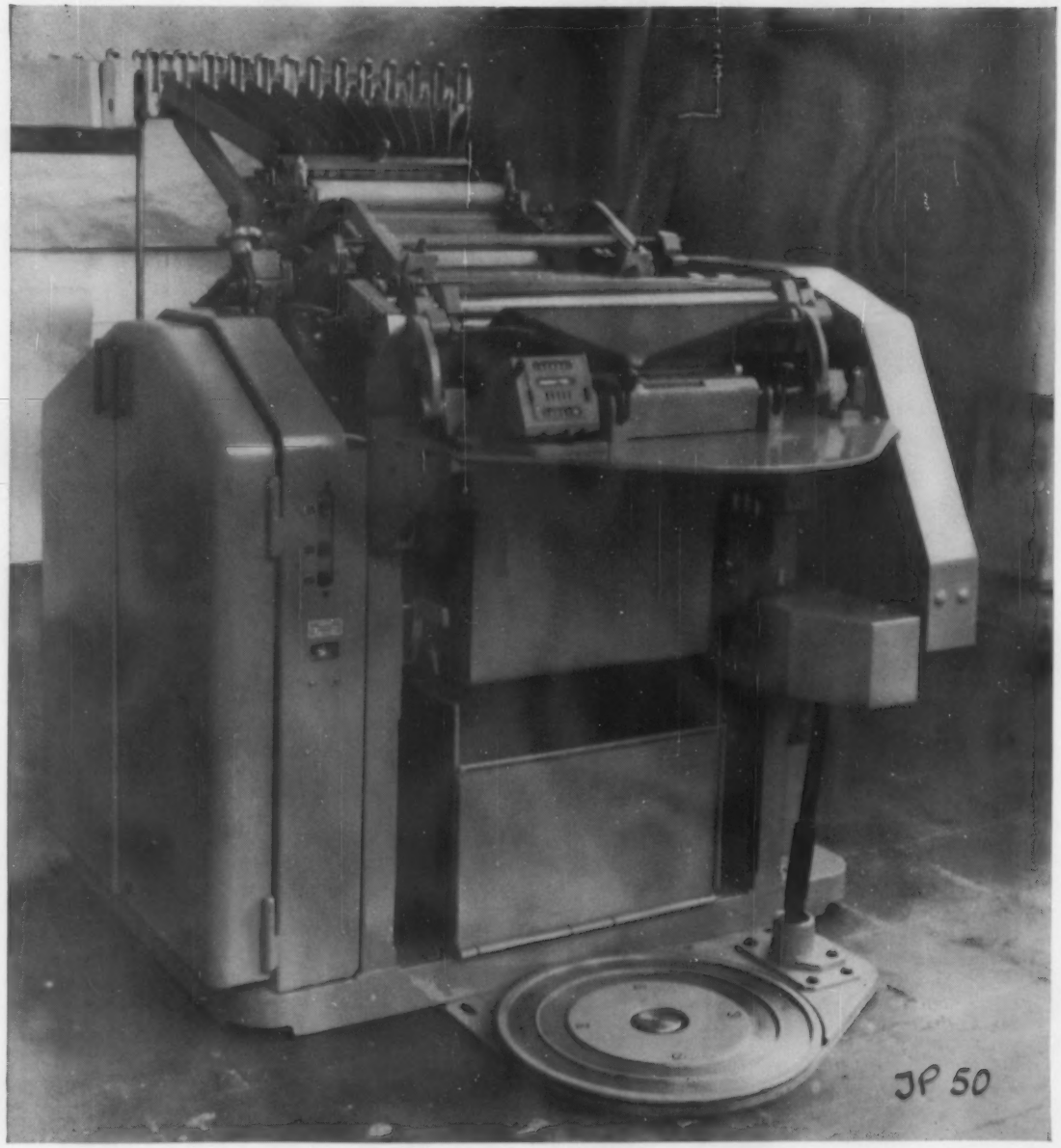
***WORLD FAMOUS***

# SCHLUMBERGER COMB

***for French-Type* Worsted Mills**




**OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.**

***Also other worsted preparatory machinery***

## N. SCHLUMBERGER & CIE

**GUEBWILLER, ALSACE, FRANCE**
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with scale, slime, and corrosion to a point where it does not function, the job involves removing foreign matter rather than preventing its formation.

**Remove Algae First**

In cleaning air-conditioning equipment, slime and algae should be dealt with first. A hot alkaline detergent solution circulated through the system is effective. Usually a concentration of 2 to 4 oz. per gal. of water at 140° F. does a thorough job.

After a detergent has been circulated through a system, it should be drained and followed by a fresh-water rinse.

With slime and algae removed, scale and corrosion may be dealt with. Chemical removal is better than mechanical removal; it is easier to do, more efficient, and less expensive. Further, it permits the removal of scale from surfaces that cannot be reached with mechanical removal tools. A specialied chemical scale remover dissolves hard scale and quickly converts it to water-soluble salt.

But when an acidic product to remove scale is used, possible metal loss must be considered. Then a product compounded into a special inhibitor designed to avoid acidic attack of base metal is preferred.

The general procedure for descaling is to employ a 15%, by volume, water solution and circulate it intermittently through the system until the scale is completely removed. *Oakite Products, Inc.*

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**EQUIPMENT & SUPPLY NEWS**

CONTINUED FROM PAGE 188

## Machine Mountings

Improved mountings to control machine vibration are announced by The Korfund Co., Inc., 48-15 32nd Pl., Long Island 1, N. Y. One mounting is a pad that isolates shock and noise. The other mounting has a load-distributing steel top plate permanently bonded to a pad.

**Circle T-40 on Reader-Service Card**

## Light-Duty Lifter

A light-duty lifter has been introduced by Colson Corp., Elyria, Ohio. The lifter has a load capacity of 1,000 lbs. and is equipped with a ¾-hp. motor with magnetic-fused starter. Lift height is 5 ft. 8 ins., and lift speed is 15 ft. per min. The platform is 24x24 ins., and the over-all weight of the unit is 455 lbs.

**Circle T-41 on Reader-Service Card**

## Steel Framing Material

An all-purpose steel framing material, being made by Acme Steel Co., Chicago 8, Ill., is used for shelving, racks, conveyor mounts, bins, carts, dollies, machine and belt guards, machine and motor mounts, ladders, scaffoldings, and tables. Slots and round holes are spaced at 3-in. intervals for rapid assembly.

**Circle T-42 on Reader-Service Card**

## Air Hammer

An air-operated all-purpose utility hammer for use as a rock drill or cement-chipping hammer has been announced by Thor Power Tool Co., Aurora, Ill. The hammer cuts clean round holes up to 1⅝ ins. in diameter.

**Circle T-43 on Reader-Service Card**

## Variable-Speed Motor

A variable-speed motor is being manufactured by U.S. Electrical Motors, Inc., 200 E. Slawson Ave., Los Angeles 54, Calif. The entire mechanism is completely enclosed in a housing with only a shaft protruding. Ratios vary from 2 to 16 and from 380 to 3,940.

**Circle T-44 on Reader-Service Card**

## Drilling Machine

A portable drilling machine to drill holes in concrete, tile, stone, or other masonry is made by Wheel Trueing Tool Co., 3200 W. Davidson Ave., Detroit 38, Mich. The machine drills holes ¼ to 4½ ins. in diameter and up to 18 ins. deep for conduits, pipes, service lines, sewer lines, etc.

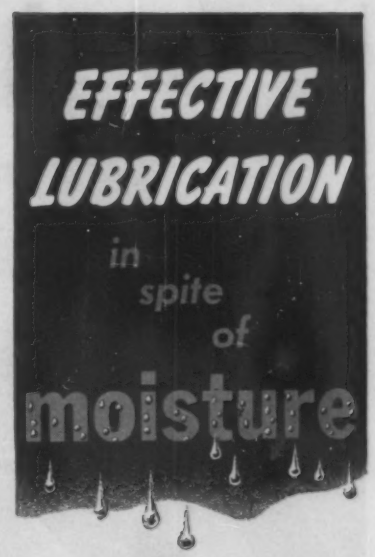
**Circle T-45 on Reader-Service Card**

## Stainless-Steel Plates

Stainless-steel plates in several thicknesses from ⅛ to 1 in., and up to 105 ins. wide are being offered by Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill. Stainless-steel plates heavier than 1 in. are available in widths of 80 ins.

**Circle T-46 on Reader-Service Card**

CONTINUED ON PAGE 196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affords machine parts and bearings real protection against rust and corrosion. It is a grease type lubricant that possesses the utmost in water and acid resistance. It has exceedingly high film strength. Due to the marked adhesiveness and water resistance of LUBRIPLATE 130-AA, it does not wash off readily, hence is the ideal lubricant in the presence of moisture.

**REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE**

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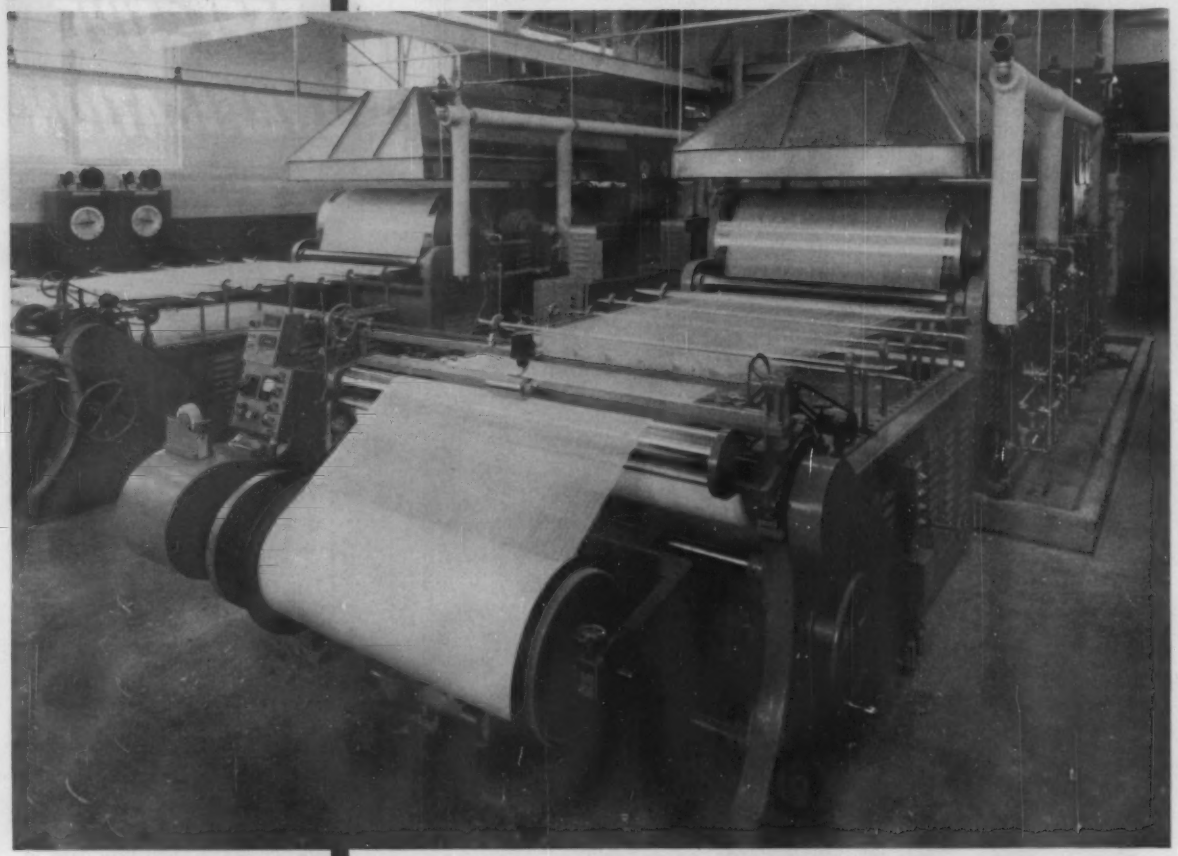
New installation at Glenwood Mills, Easley, S. C.
(Division of Mayfair Mills, Arcadia)



# Another 100% Cocker Slasher Installation

With these two Cocker Slashers, Mayfair Mills joins the many other fine mills which rely 100% on Cocker Slashers. Perhaps the finest recommendation for Cocker Slashers and Service is the fact that one Cocker Slasher in a mill usually results in a complete Cocker installation.

Cocker Slashers have many outstanding advantages, such as complete and accurate push button controls over speed, tension, etc.—air operated rolls—full instrumentation—fast and simple beam doffing—and smooth operation at speeds up to 140 yards per minute. Mills report 20% to 25% more yarn on loom beams and production rates of over 1400 lbs. per hour.

Cocker Slashers will handle all types of yarns. Built with 5 to 13 cylinders up to 144" in width. Call on Cocker for complete information or engineering service.

**New England & Canadian Representatives: J. S. Fallow & Co., 279 Union St., New Bedford, Mass. — 1215 Greene Ave., Montreal 6, Canada**

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**COCKER** Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT



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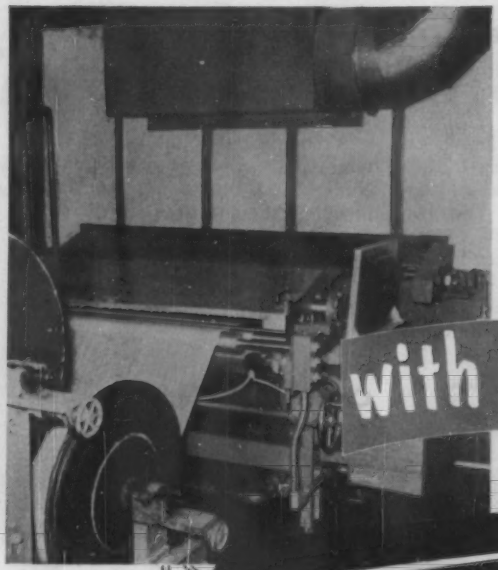

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"Foot friendly" Northern Hard Maple is the best floor you can put under your feet. Workers like its *resiliency*, its bright, tight structure that brushes dirt-free easily, fights scuffs, scars, dents. It's easy to refinish and lasts for years. Write for 1957 listing of **MFMA**-approved floor finishing products. See Sweet's (Arch. 13j-MA) for full technical data.

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NORTHERN HARD MAPLE
the finest floor that grows
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CONTINUED FROM PAGE 193

## Tank Vacuum Cleaner

A tank-type vacuum cleaner is available from Ideal Industries, Inc., Sycamore, Ill. The cleaner has a 1½-hp. motor and 5-in. wheels. The two front wheels swivel so that the cleaner can be pulled by the air hose. The lid has no clamps or bolts to loosen; so it's easy to lift off. The vacuum action seals the lid as soon as the motor is started.

**Circle T-47 on Reader-Service Card**

## Adjustable Ladder

A magnesium ladder that is adjustable four ways is being marketed by Abbeon Supply Co., 179-33 Jamaica Ave., Jamaica 32, N. Y. It can be used as a regular stepladder or straight ladder. The back legs can be adjusted to use the ladder on stairs. The back can also be raised to form an extension ladder. Sizes begin at 6 ft. and go through 10 ft. The extended size of the 6-ft. ladder is 10 ft.

**Circle T-48 on Reader-Service Card**

## Steam Trap

A steam trap said to practically eliminate maintenance is announced by Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y. The same trap can be used for pressures of 10 to 600 psi. It closes tight on no load and operates against back pressures up to 50% of inlet pressure.

**Circle T-49 on Reader-Service Card**

## Automatic Conveyor

A fast tray-type interfloor conveyor that automatically loads, transfers, and delivers heavy loads between as many as six floors is announced by Gifford-Wood Co., Hudson, N. Y. It is designed for textile mills and warehouses.

**Circle T-50 on Reader-Service Card**

## Electric Motors

A line of polyphase motors in NEMA frame sizes 182 through 326 are available from Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo. The motors are 3-phase, 60-cycle, 1,750 rpm.

**Circle T-51 on Reader-Service Card**

## Casters

A complete line of casters is announced by Bond Foundry & Machine Co., Manheim, Pa. The casters include stationary truck casters, swivel casters, and dual-wheel casters with oscillating axles.

**Circle T-52 on Reader-Service Card**

## Centrifugal Pumps

Pumps that work efficiently when volume or head pressure varies have been marketed by Gardner-Denver Co., Quincy, Ill. Called the Model BL, the pumps can be had in five sizes from 2 to 6 ins. Ball bearings and mechanical seals are featured for long life and low maintenance.

**Circle T-53 on Reader-Service Card**

## Variable Expander

An expander that can be adjusted from straight to maximum-spreading form while running at operating speed has been announced by Mount Hope Machinery Co., North Dighton, Mass. Supplied in widths to 210 ins., the expander is especially adapted to removing sags and wrinkles from papermaker's felts.

**Circle T-54 on Reader-Service Card**

## Packaging Adhesives

Nine products comprise a line of special adhesives introduced by Paisley Products, Inc., 630 W. 51st St., New York, N. Y. Each adhesive is designed for a specific purpose, ranging from sealing paper products to forming closures on all the various plastics and latices used in packaging.

**Circle T-55 on Reader-Service Card**

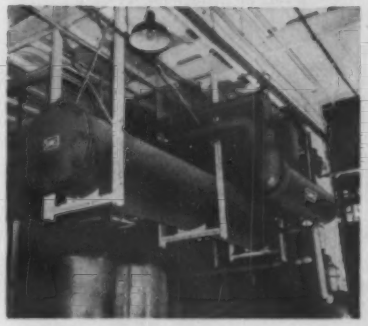
## Protective Cream

A silicone-based cream designed to protect the skin from various chemicals has been announced by Soluol Laboratories, Inc., Natick, R. I. Called Solucone, the product is effective in preventing skin irritations caused by many dyes and chemicals.

**Circle T-56 on Reader-Service Card**

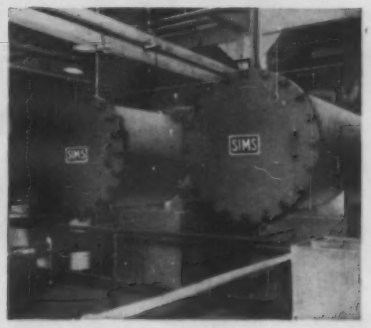
CONTINUED ON PAGE 198

# These 3 FINISHING PLANTS save money with SIMS EXCHANGERS



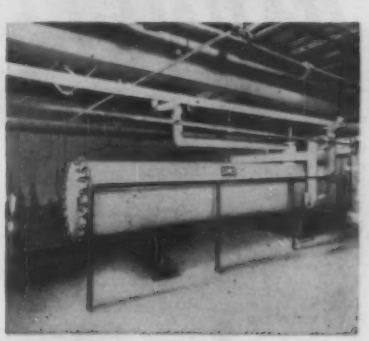
*at Pepperell, Ala.*

6 large Sims Textile type Heat Exchangers serve bleaching and dyeing ranges and mercerizer. Each waste water exchanger is connected to a Sims booster exchanger using steam to raise temperature of water. Typical of all, is the operation of one, on the dye range, fresh cold water introduced at 72°F. is raised to 136°F. The 6 Sims Exchangers were equivalent to an added 40,000 lbs./hr. boiler.




*at Granitville, S.C.*

2 very large Sims Textile type Heat Exchangers are fed from a hot waste water collecting tank. An average of 50,000 gallons per hour of incoming fresh water gains 42°F. passing through the exchangers. These 2 Sims Exchangers are floor mounted and serve dyeing ranges and mercerizer to convert waste hot water into usable hot water.



*at Clevedale, S.C.*

One of 3 Sims Textile type Heat Exchangers serves a mercerizing department. About 250,000 gals. per day of waste water at 175 to 180°F. are passed through this exchanger. Incoming fresh water at 77°F. gained 35°F. at a flow of 172 gallons per minute. Savings on a 24 hour basis amounted to 83,062,500 B.T.U.'s. The 2 other Sims Exchangers operate on bleaching ranges.

## Why it's routine to keep a SIMS clean - - -

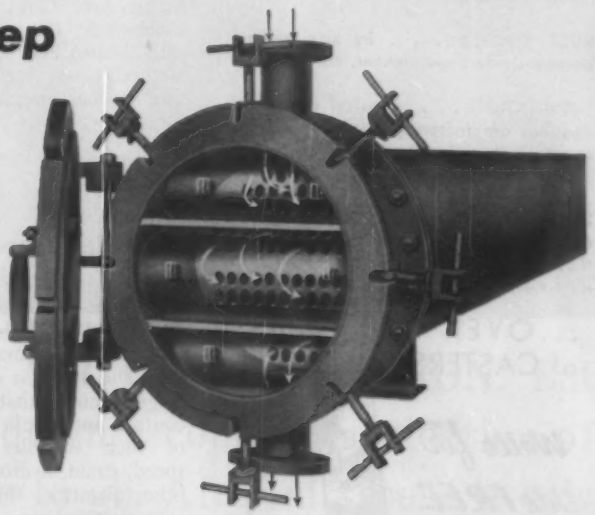
Swinging doors at each end open wide to expose full length of straight-thru 1¼" diameter tubes.

In 30 to 60 minutes a Sims Exchanger can be clean as a hound's tooth and back on the line.

You can be sure a Sims is clean, for you can see it.

There are scores of installations by Sims of Erie in the South for you to see first hand.

Ask for Bulletin TE-4.



**THE SIMS CO.**

**Manufacturers of Exhaust Gas Boilers • Storage Water Heaters • Heat Exchangers • Feed Water Heaters • Steam Separators**

**SIMS SINCE 1886**

**Erie, Pennsylvania**

**• Quenching Oil Coolers • Oil Heaters • Caustic Soda Recovery Equipment • Commercial type Instantaneous Water Heaters.**



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**...all yours**
**in**
**DARNELL**
CASTERS AND WHEELS

***for maximum***
***long life, minimum***
***maintenance***

**RUBBER TREADS** . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads,

**RUST-PROOFED** . . . by zinc plating, Darnell Casters give longer, care-free life

**LUBRICATION** . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water.

**STRING GUARDS** . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

...OVER 4000 TYPES
of CASTERS & WHEELS

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DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
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CONTINUED FROM PAGE 196

## Electrostatic Air Cleaner

An air filter that develops its own electrostatic charge has been announced by Goodyear Tire & Rubber Co., Akron 16, Ohio. The intake side is composed of vinylidine chloride. The center is made of shredded polyethylene film, and the filter is backed by a plastic-bonded glass-fiber mat. The unit is washable and can be used in any installation where air temperatures do not exceed 212° F.

**Circle T-57 on Reader-Service Card**

## Pallet Truck

A pallet truck that features short lost length and increased underclearance with maximum power and stability is announced by Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Philadelphia, Pa. Called the Worksaver, the truck operates from storage batteries and has Yale's Breakaway feature for easy accessibility to battery and mechanical unit.

**Circle T-58 on Reader-Service Card**

## Colored Stitching Wire

Stitching wire in 12 color shades is made by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill. Called Colorstitch, the wire can be used with Acme Steel's Arcuate stitching method or as regular flat stitching wire on all standard stitching machines.

**Circle T-59 on Reader-Service Card**

## Potentiometer-Recorder

Development of its Series 8000 Electronic Potentiometer-Recorder is announced by Wheelco Instruments Div., Barber-Colman Co., Rockford, Ill. The device is available in a wide range of models that measure, indicate, control, and give a permanent record of such variables as temperature, speed, strain, hydrogen ion (pH), and other quantities that can be resolved into electrical signals.

**Circle T-60 on Reader-Service Card**

## Laboratory Extraction Rack

Extraction racks in two- or six-unit models with individual hot plates are available from Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill. Stepless heating from 250 to 650° F. is provided by individual rheostats on each hot plate, giving flexibility of operation.

**Circle T-61 on Reader-Service Card**

## Nonslip Floor Coating

A waxless product for treating factory floors to make them slip resistant has been announced by U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago 12, Ill. Called Flourish, the product provides a hard surface that is resistant to water and wear.

**Circle T-62 on Reader-Service Card**

## Lightweight Hoist

A two-ton winch hoist with extra strength, reach, and safety features is announced by Lug-All Co., 355 Lancaster Ave., Haverford, Pa. One man can carry and rig the hoist. There is a reversible safety handle that bends before the hoist is severely overloaded; there is no brake or clutch to slip; an interlocking pawl system gives positive control; and open construction makes cleaning easy.

**Circle T-63 on Reader-Service Card**

## Electric Motors

Electric motors for textile machines are being manufactured by Electro Dynamic Div., General Dynamics Corp., 163 Ave. A, Bayonne, N. J. The motors include: (1) gear motors with a wide range of speeds, (2) variable-speed drives connected to d.c. motors, and (3) standard motors in the new NEMA frames.

**Circle T-64 on Reader-Service Card**

## Instrument Records Noise

An instrument to measure and analyze noise has been introduced by Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa. The instrument, called Soundscope, is 16 ins. long, 7¾ ins. wide, and 7 ins. deep. Soundscope has a leather shoulder strap for handling in industrial areas.

**Circle T-65 on Reader-Service Card**

CONTINUED ON PAGE 200

**THIS MAN HAS HUNTED ALL OVER CREATION.** But when it comes to tracking down a complete selection of needles he knows right where to go. After all, there is only one correct answer—for knitting, sewing, tufting, or felting —it's **THE TORRINGTON COMPANY.**

*Torrington, Conn., U.S.A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles*



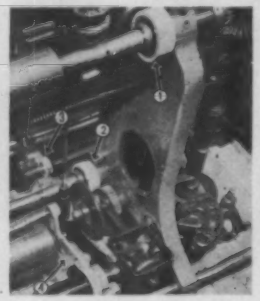
For more data, write this page number on Reader-Service card. →

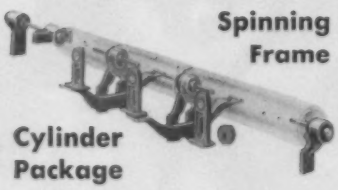
Precision "Package" Bearing Units Save Money — Improve Quality

"Piece-meal" bearing changeovers may temporarily correct trouble spots, but misalignment and looseness transferred from other points cause rapid wear to new and old parts alike.

A Precision "Package" is a complete set of bearings which eliminates misalignment and strain at ALL points. It reduces downtime and replacement costs—increases speeds—and permits better quality control.

(1) Top Cone Bearings
(2) Lift Shaft Bearings
(3) Spindle Shaft Bearings
(4) Back Shaft Bearings





Spinning Frame

Cylinder Package

*Precision* produces complete "package" units for Spinning, Roving, Carding, Lapping, and Picking Frames of all makes. Engineering service available.

Largest Stocks in America

Precision Gear & Machine Co.
2001 N. Tryon St. • ED 4-6857
Charlotte 1, North Carolina




CONTINUED FROM PAGE 198

## Lubrication System

An automatic air-operated system for lubricating production machines is available from Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo. The device dispenses fluid lubricants at predetermined time intervals through a single supply line to a circuit of lubricant injectors or measuring valves mounted on the machine singly or in manifolds of two to five valves.

**Circle T-66 on Reader-Service Card**

## Wall Washer

An automatic, noiseless, dripproof device for cleaning painted walls is announced by Quaker Maintenance Co., Inc., 124 W. 18th St., New York 11, N. Y. The cleaner has two tanks; a gallon of water in one tank and a gallon of diluted cleaner in the other last 8 hrs. Operation is entirely manual; there are no electrical connections; anyone can use the cleaner; operation is noiseless.

**Circle T-67 on Reader-Service Card**

## Speed Reducers

Shaft-mounted speed reducers with capacities from 1 to 60 hp. and output speeds from 12 to 365 rpm. are being offered by Dodge Mfg. Co., Mishawaka, Ind. The speed reducers are being made in two sizes and have an increase of 40% horsepower capacity over older models made by the company.

**Circle T-68 on Reader-Service Card**

## Hardened-Steel Bars

Hardened-steel bars for use as guide rods, shafts, rolls, piston rods, axles, etc., are available from Thomson Industries, Inc., Manhasset, N. Y. Called 60 Case, the material can be processed without the necessity of heat-treating and possible distortion. Standard sizes of the material range from ¼ in. to 4 ins. in diameter and from 8 to 14 ft. in length.

**Circle T-69 on Reader-Service Card**

## Differential Regulator

A differential pressure regulator incorporating a self-contained needle valve is announced by Conoflow Corp., 2100 Arch St, Philadelphia 3, Pa. Called the Model H-21F, the relay can be used for economical purging of water, air, or gas in services where actual measurement of flow is unnecessary.

**Circle T-70 on Reader-Service Card**

## Dust Collector

A collector for the control of industrial dusts is available from Pangborn Corp., Hagerstown, Md. Called the Ventrijet, the collector achieves the proper atomizing of water and mixing with the air stream to permit efficient dust transfer by the movement of air and without mechanical means.

**Circle T-71 on Reader-Service Card**

## Flexible Hanger

Crouse-Hinds Co., Wolf and Seventh North St., Syracuse, N. Y., announces an explosionproof and dusttight flexible fixture hanger. It is designed to eliminate danger to the light fixture and stem assemblies while supporting loads up to 65 lbs.

**Circle T-72 on Reader-Service Card**

## Steam Generator

A compact steam generator that delivers 5,000 lbs. of steam per hour and covers only 8x7 ft. of floor space is available from Cyclotherm, Oswego 11, N. Y. The machine is a dry-land adaptation of a Cyclotherm marine steam generator, and it is possible to obtain 150 hp. in less than half the space required for the average-package steam generators.

**Circle T-73 on Reader-Service Card**

## Flexible Coupling

A radially removable flexible coupling is made by Lovejoy Flexible Coupling Co., 4839 W. Lake St., Chicago 44, Ill. The lubrication-free assembly is available in six sizes, ranging from 2.58 to 29.6 hp. at 100 rpm. and is especially suitable for centrifugal and impeller pumps and other installations where radial removability is required.

**Circle T-74 on Reader-Service Card**

# The Springs Cotton Mills' lint problems are wrapped up *here!*

The Springs Cotton Mills' Grace Bleachery, Lancaster, S. C. Air-conditioning system designed and installed by Buensod-Stacey, Inc., Charlotte, N. C.

## AAF Auto-AIRMAT filters provide lint-free air for Grace Bleachery

You won't find any "lint on the loose" at Spring Mills' Grace Bleachery in Lancaster, South Carolina. Automatic lint filters—AAF Auto-AIRMATS—are standing guard at eight air conditioning systems supplying 120,320 cfm of clean air.

Auto-AIRMAT is the *only* filter designed to remove lint fibres from the air and clean itself at the same time! Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—rewinds into easily disposable roll at bottom.

If you have a *lint problem*, get all the facts on the *lint filter* — AAF's Auto-AIRMAT. Call your AAF representative or write for Bulletin 234.

AAF Filters and Precipitators

AAF Dust Control Equipment

AAF

herman nelson

**American Air Filter**

COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

— BETTER AIR IS OUR BUSINESS —

Herman Nelson Unit Heaters

Illinois Heating Specialties



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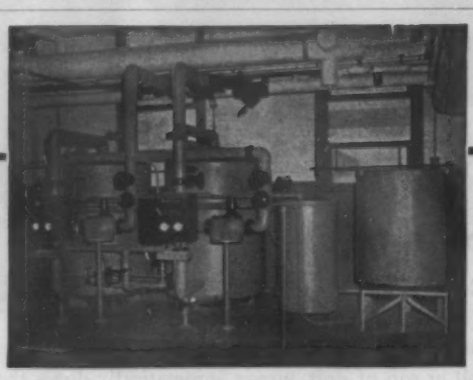
Johnson Joint with SYPHON ELBOW
3000 Series
ASSEMBLY PLATE — Holds internal parts in position when head is removed.
SELF-SUPPORTING — Needs no external supports of any kind.
SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

***WRITE FOR FACTS***

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.



**INVERSAND WATER SOFTENER PLANT**

**Producing**

**CLEAR-IRON FREE 100% SOFT WATER**

**Often For As Little As 1¢ per 1000 Gallons**

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

**HUNGERFORD & TERRY, INC.**

CLAYTON 9 NEW JERSEY




## NEWS ABOUT SUPPLIERS

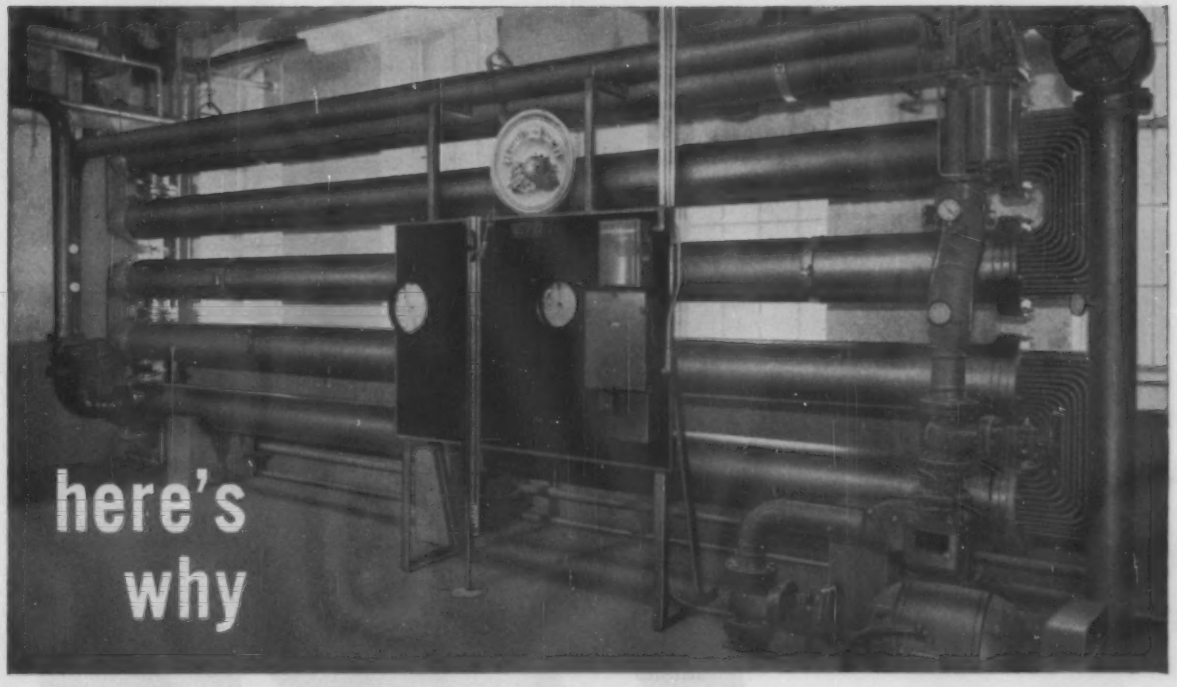
**ALCO OIL & CHEMICAL CORP.**, Philadelphia, Pa.—Has appointed C. E. Cain head of a new planning department, handling work on various new Alco textile, chemical, and rubber products. . . . **ALLIED CHEMICAL & DYE CORP.**, New York, N. Y.—Has appointed James P. Farrell director of sales of the General Chemical Div. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has appointed Thomas W. Metz manager of the Mid-Atlantic region of Allis-Chalmers Industries Group. John L. Wiedey has been named manager of the Indianapolis district, succeeding Mr. Metz. . . . **AMERICAN ANILINE PRODUCTS, DIV. OF KOPPERS CO., INC.**, Pittsburgh, Pa.—Has transferred Joe T. Bohannon, Jr., to the sales headquarters in Pittsburgh. Karl C. Ruppenthal has been transferred to Chattanooga, Tenn., succeeding Mr. Bohannon, and Edward S. Johnson will be transferred from the Chattanooga sales-service laboratory to sales representative covering accounts in Tennessee and northern Georgia. . . . **AMERICAN CYANAMID CO.**, Pensacola, Fla.—Has started construction on a multimillion-dollar plant that will produce its new acrylic fiber, Creslan.

**WILLIAM B. DENNISTON (lef) has been named sales manager of Panellit, Inc., Skokie, Ill. JONATHAN KLUDT (center) has been elected executive vice president and general manager of Lincoln Engineering Co., Div. of McNeil Machine & Engineering Co., Akron, Ohio. BOYCE C. BOND (right) has been appointed resident manager of the Philadelphia sales territory for Metro-Atlantic, Inc., Centredale, R. I.**

**AMERICAN MONORAIL CO.**, Cleveland, Ohio—Has authorized a million-dollar plant-expansion program that will be completed in 1958. . . . **AMERICAN SAFETY RAZOR CORP.**, Staunton, Va.—Has adopted a new corporate name, A. S. R. Products Corp. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has announced the formation of a technical and textile service department, representing the merger of the Textile Research Dept. and the Corporation Technical Dept. The company has also announced a new high-strength staple fiber, Avisco XL. . . . **BRISTOL CO.**, Waterbury, Conn.—Has opened a new branch factory and repair laboratory in Los Angeles, Calif. . . . **CELANESE CORP. OF AMERICA**, Charlotte, N. C.—Has appointed Laurence T. Gerrity as assistant general sales manager of the Textile Div. . . . **CENTURY ELECTRIC CO.**, St. Louis, Mo.—Has opened a branch office in Portland, Ore. . . . **CLARK EQUIPMENT CO., INDUSTRIAL TRUCK DIV.**, Battle Creek, Mich.—Has promoted L. A. DePolis to the new position of director of sales and Bert E. Phillips to sales manager.

**CLINTON CORN PROCESSING CO.**, Clinton, Iowa—Has moved its division sales office from 161 Spring Street Building, Atlanta, Ga., to 504 Bona Allen Building. . . . **CORNING GLASS WORKS**, Corning, N. Y.—Has completed construction of its research laboratories and administration buildings at Houghton Park. . . . **CRANE CO.**, Chicago, Ill.—Has elected Joseph W. Greene as vice president of sales. . . . **CRUCIBLE STEEL CO. OF AMERICA**, Pittsburgh, Pa.—Has elected George W. Stamm as vice president and general manager of sales.

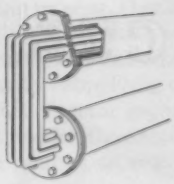
**DOBECKMUN CO.**, Cleveland, Ohio.—Has appointed J. M.



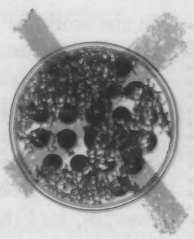

## textile finishing plants recover MORE DOLLARS from process waste water with a Bready System of Heat Recovery

❶ Guaranteed to recover all of the heat economically feasible — *continuously*. ❷ Guaranteed self-cleaning — there is no efficiency loss due to fouling and plugging — no down time. ❸ Automatic operation — requires only a periodic mechanical checkup. ❹ Expansible — easily keeps pace with any future plant growth. ❺ Lowest maintenance cost —turns more B.T.U. into profits.

No textile or laundry plant should overlook the inherent advantages in a Bready system for recovering the heat from process waste water. Equally important is Ludell engineering know-how. Over thirty years of specialization in the field of heat recovery is in back of these systems. To date, there have been over one-thousand installations. It will pay you to investigate a Bready System of Heat Recovery for your own plant. Send a card to Ludell today for complete details.



**CONTINUOUS TUBES.** Only the Bready System has the patented continuous tube feature that permits lint and other solids to be completely back-flushed directly to the sewer. Once a solid enters a tube, it will pass completely through the tube.



**NO MULTIPLE TUBE SHEET ENTRANCES.** There are no cavities or tube sheet entrances where solids can impinge, or accumulate and disrupt the flow of water through the system. Accumulation is confined to the inlet tube sheet for only a short period of time, after which at set intervals it is backflushed out of the system and *directly into the sewer* without being strained through another tube sheet.

**AUTOMATIC BACK-FLUSHING.** Timed automatic backflushing, combined with the Bready exclusive, continuous multi-tube construction, fully and completely prevents clogging or stop-up of the system and maintains maximum high heat transfer.

**Ludell**
*Manufacturing Company*
5200 West State Street • Milwaukee 8, Wisconsin

*Representatives in the United States, Canada and Alaska*

MANUFACTURERS OF BREADY SYSTEMS OF HEAT RECOVERY, BREADY SYSTEMS OF HOT WATER HEATING, AND WHEELER SELF-UNLOADING WASHER



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# NOTHING PROTECTS LIKE STAINLESS STEEL

**Write for your Copy:**
**AL STAINLESS STEEL Report to the Textile Industry**

40 pages of useful information on the applications and advantages of stainless steel in textile plant equipment of all types. Well illustrated—also contains a technical section of data on selection and fabrication, etc.

**ADDRESS DEPT. TW-91**

In the world of products and equipment, just as in Nature, *protection* is the difference between a long life and a too-early end.

Many materials are good-looking. Some are strong. Some resist corrosion. But not one other commercially-available material offers the same combination of beauty, high strength, high hardness and resistance to corrosion, heat and wear that stainless steel can give you. Not one has the ability to protect as completely, last as long and cost you as little in the long run.

These qualities in AL Stainless Steel can boost the salespower of a product, or cut the operating costs of equipment—often with little or no increase in first cost. Very likely *you* have problems where these advantages can bring you benefits. Let us work with you. ***Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pennsylvania.***

W&D-5439C

**For Stainless Steel in ALL Forms—call**

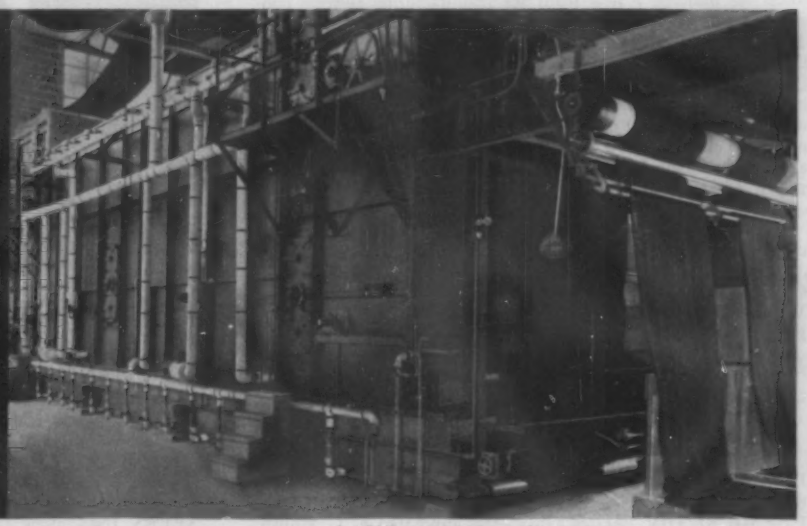
# Allegheny Ludlum

**Warehouse stocks carried by all Ryerson Steel plants**

AL STAINLESS STEEL

## Here is an immediate opportunity for **PROFIT**
## *the Proctor & Schwartz* loop ager for printed fabrics

- PAYS FOR ITSELF IN ONE YEAR
- REPLACES 5 ROLLER AGERS
- REQUIRES ONLY 2 MEN PER SHIFT
- VIRTUALLY ELIMINATES AGEING "SECONDS"



The Proctor & Schwartz Loop Ager has been proven to pay for itself quickly—often yielding profits equal to original investment in a single year. Completely outmoding existing units, this advanced system for ageing vat dyed print goods does the work of five roller agers, cuts floor space needed in half, and eliminates ageing re-runs. One installation saved $45,000 per year in direct labor alone, with savings in dyestuffs, glycerine and steam exceeding this amount. Standard sizes range from 2 to 7 units—supplying outputs from 27,000 to 95,000 yards per shift. Proctor engineers will be glad to make recommendations for the exact equipment to meet your particular production requirements. Write for information.

PROCTOR & SCHWARTZ *equipment for the textile field*

Automatic Blending Systems
Weighing Feeds
Pickers
Shredders
Bale Breakers
Synthetic Cards
Garnetts
Dryers For Fibrous Material
Yarn Dryers
Hot Air Slasher Dryers
Cloth Carbonizers
Roller Dryers And Curers
Loop Agers For Print Goods
Tenter Housings
Open-Width Bleach Systems For Woven Fabrics
Multipass Airlay Dryers
Nylon Setting Equipment
Con-O-Matic Washers
Continuous Bleach Systems For Producing Tubular Knits
Equipment For "Redmanized"® Shrunk-To-Fit Fabrics
Carpet Dryers

Proctor **PROCTOR & SCHWARTZ, INC.**
Philadelphia 20, Pa.

Manufacturers of Textile Machinery and Industrial Drying Equipment

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Hannan to the newly created position of assistant sales manager, automotive products. . . . **DOW CORNING CORP.**, Midland, Mich.–Is building a new plant for manufacturing silicone consumer products at Greensboro, N. C. . . . **EMERY INDUSTRIES**, Cincinnati, Ohio.–Has appointed W. N. Fieglein to the Southwest sales territory. . . . **FAIRBANKS, MORSE & CO.**, Chicago, Ill.–Has appointed A. B. Parker as sales manager, mechanical sales, Scale Div. C. E. Marion has been appointed manager of the San Francisco branch scale department, succeeding Mr. Parker. . . . **FLEXONICS CORP.**, Maywood, Ill.–Has appointed Robert F. Barge as sales engineer for the Lake Erie and St. Lawrence area.

**FOXBORO CO.**, Foxboro, Mass.–Will start construction this month on a new addition to its instrument manufacturing plant. . . . **GENERAL ANILINE & FILM CORP., DYESTUFF & CHEMICAL DIV.**, New York, N. Y.–Has named Sumner H. Williams coordinator of sales programming. . . . **GENERAL ELECTRIC CO.**, Cleveland, Ohio.–Has announced that regional sales offices, Large Lamp Dept., in Cleveland, Chicago, Atlanta, New York City, and San Francisco have been opened. . . . **GENERAL LATEX & CHEMICAL CORP.**, Cambridge, Mass.–Has appointed Thomas C. Holst to the sales staff.

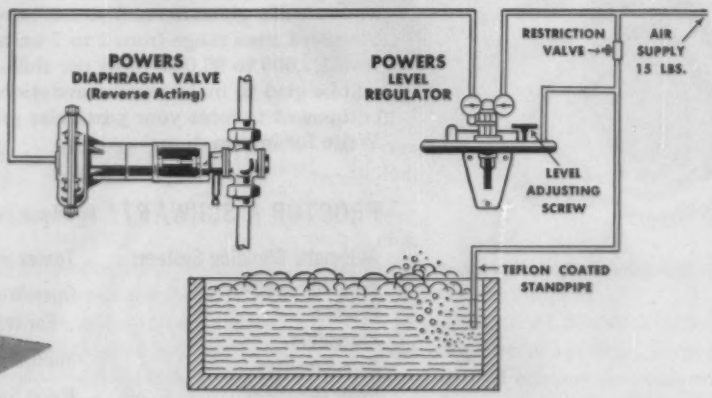
**GENERAL TIRE & RUBBER CO., TEXTILEATHER DIV.**, Toledo, Ohio.–Has named Irving Zweig Northeastern U. S. district sales manager. . . . **GOODYEAR TIRE & RUBBER CO., CHEMICAL DIV.**, Akron, Ohio.–Has appointed E. C. Brown, Jr., to the New York City office. . . . **HINDE & DAUCH PAPER CO.**, Sandusky, Ohio.–Has appointed Emil H. Berges district sales manager at the company's new corrugated-box factory in Meriden, Conn. Ralph Q. Centola will be plant production manager, and Charles L. Gillespie has been appointed office manager.

G. G. WORKINGER (left) has been appointed general sales manager of McQuay, Inc., Minneapolis, Minn. JAMES W. CASWELL (center) has been appointed Southeastern representative for the Socket Screw Div., Bristol Co., Waterbury, Conn. HAROLD C. WOOD (right) has been appointed a district manager for Onyx Oil & Chemical Co., Boston, Mass.

**KENT PRINTING INK CORP., SUBSIDIARY OF CLAREMONT PIGMENT DISPERSION CORP.**, Roslyn Heights, N. Y.–Has commenced manufacturing water-phase textile colors at its plant. . . . **LAMSON CORP.**, Syracuse, N. Y.–Has appointed W. Gerald Manterman as manager of sales of the Industrial Div. . . . **LINK-BELT CO.**, Chicago, Ill.–Has acquired 41 acres of land about 11 miles south of Atlanta, Ga., as a possible future plant site. . . . **LOCKWOOD GREENE ENGINEERS, INC.**, New York, N. Y.–Has elected S. B. Roberts as a vice president. He handles new projects of various categories, particularly textile, synthetic-fiber, and chemical plants.

**OLIN MATHIESON CHEMICAL CORP., ALUMINUM DIV.**, New York, N. Y.–Has opened its district sales office at 1330 W. Peachtree St., N. W., Atlanta, Ga. . . . PACKAGE


*control*
**SIZE**
*level...*
*not*
**FOAM**
*level*

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**POWERS SYSTEM CONTROLS SIZE LEVEL TO WITHIN 1/8"**

Powers pressure-sensitive Level Regulator offers important advantages over electrical control methods. The Powers system is never "fooled" by the top layer of foam—always controls size level accurately to within 1/8". This bubble system automatically replaces size at the same rate it is used, thereby reducing hard size.

Finally, in the Powers control only the Teflon coated standpipe is in the tank, so you avoid cleaning problems encountered with rapidly caking electrodes . . . virtually eliminate erratically sized yarns and consequent loom stoppages. Powers offices in 66 principal cities—including all textile centers—can supply this system on a material-only or installed basis. Get complete information today.

*For complete information on size level control, use reader service card, or write to:* **The Powers Regulator Company, Dept. 757, Skokie, 18, Illinois**

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# Now the most versatile chelating agent is also the lowest in cost

# VERSENE 100

*effective over a wide pH range, available from two stock points*

Now—in solving metal ion problems—you can have your cake and eat it! Thanks to Versene® 100, a liquid concentrate of tetrasodium salt of ethylenediaminetetraacetic acid.

Stable to acids and alkalies even in boiling solutions, Versene 100 inactivates calcium, magnesium and other metal ions. It will not revert to an inactive form. Versene 100 ties up these contaminants completely within an inner ring structure . . . actually forms a new, harmless compound with hardness and trace metals in solution. Applications in textile and rubber processing, in chemical purification and boiler descaling, in soaps, syndets, all types of detergent formulations have proved Versene 100 the most versatile and effective chelating agent commercially available. And now, it's also the most economical! Available from two stock points at Framingham, Massachusetts, and Freeport, Texas.

**Free new brochure!**

To describe more fully Versene 100 and the several other Versene and Versenol* products for chelation, an informative 16-page brochure has been prepared for your personal use. You'll find it valuable. For instance, if iron ions were a contamination factor in your process or in your product, this booklet would quickly refer you to an iron-specialty agent such as Versenol® 120. A liquid, Versenol 120 complexes both ferrous and ferric iron over a wide pH range.

Fact is, you'll find this booklet's discussion of the chemistry of chelation, Dow chelating agents and their uses helpful in correcting any metal ion problem. With the Versene and Versenol products practically every metal ion in any solution can be chelated. Contact your nearest Dow sales office for "Keys to Chelation". Or write us direct. THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. CA 1313RB.

*Trisodium salt of N-hydroxyethylethylenediaminetriacetic acid

YOU CAN DEPEND ON DOW



For more data, write this page number on Reader-Service card. →

PRODUCTS CO., INC., Charlotte, N. C.–Has named William B. Campbell sales representative in the flexible-packaging division. . . . **PENNSYLVANIA SALT MFG. CO.**, Philadelphia, Pa.–Has changed its name to Pennsalt Chemicals Corp. . . . **RADIANT HEAT ENTERPRISES, INC.**, Short Hills, N.J. –Has appointed Marshall & Williams Equipment Co., Greenville, S. C., Southern sales representative.

**RAYBESTOS-MANHATTAN, INC., MANHATTAN RUBBER DIV.**, Passaic, N. J.–Has appointed J. E. Post as sales manager, roll coverings. . . . **REFINED PRODUCTS CORP.**, Lyndhurst, N. J.–Has completely reorganized its field technical staff as part of an expanded quality-control program to assure proper end-use standards of Syl-mer silicone emulsions for textiles. . . . **ROBERTSHAW-FULTON CONTROLS CO., FLEXIBLE SHAFT DIV.**, Plainfield, N. J.–Has moved to a new and larger manufacturing plant in Chatham, N. J. . . . **ROLLWAY BEARING CO., INC.**, Syracuse, N. Y.–Has appointed H. Follett Hodgkins, Jr., to assistant general manager.

**ACME CHAIN CORP., Holyoke, Mass., has completed its move into a new $800,000 building in Springdale Industrial Park.**

**JOSEPH T. RYERSON & SON, INC.**, Chicago, Ill.–Will begin an expansion program at its Pittsburgh, Pa., steel service plant at an estimated cost of $1,000,000. James E. Burke has been appointed manager of alloy and stainless-steel sales at the plant. . . . **SHAWINIGAN RESINS CORP.**, Springfield, Mass.–Has announced that Irving Ash has joined the New York district sales office. . . . **SHERWIN-WILLIAMS CO.**, Cleveland, Ohio.–Has appointed Peter Bruinooge sales representative for Sherdye textile printing colors. . . . **SONOCO PRODUCTS CO.**, Hartsville, S. C.–Has acquired all the outstanding shares of stock of National Paper Co., Atlanta, Ga. . . . **STEEL HEDDLE MFG. CO.**, Philadelphia, Pa.–Has appointed Thomas Starmont plant and product manager of Stedco-Southern, Inc., Greensboro, N. C., subsidiary of Steel Heddle. The company is sponsoring a new series of TV programs saluting textile plants in the Piedmont area of the Carolinas. . . . **STEIN, HALL & CO., INC.**, New York, N. Y.–Has appointed William A. Juenger as sales representative at its St. Louis branch office. **STELLITE AMERICAN CORP.**, New York, N. Y.–Has changed its name to Stellamcor, Inc.

**TERRELL MACHINE CO., INC.**, Charlotte, N. C.–Has completed an addition of new manufacturing facilities for sales and services of its machines and supplies. . . . **UNION CARBIDE CHEMICAL CO.**, New York, N. Y.–Has appointed R. M. Joslin manager, Fine Chemical Dept. W. A. Woodcock has been appointed sales manager, Industrial Chemicals. . . . **VICKERS INC.**, Detroit, Mich.–Has appointed F. V. Gieryn sales manager, Industrial Dept. . . . **WERNER TEXTILE CONSULTANTS**, New York, N. Y.–Has appointed William Zwickler to its staff.


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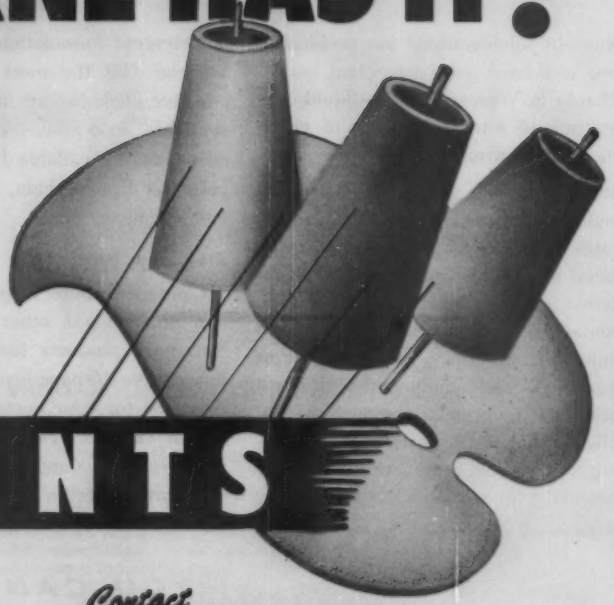
## *Identification*
**on All Synthetics–Blends**

## *Plus* FUGITIVITY
**UNMATCHED**
**ON NYLON & WOOL!**

*The Amazing New*

# SOLUTINTS



SOLUTINTS are a series of fugitive tints that provide identification, lubrication, and improved processing of all natural and synthetic fibres. In addition to giving *maximum tinctorial strength* — SOLUTINTS combine controlled moisture retention with *improved scourability.*

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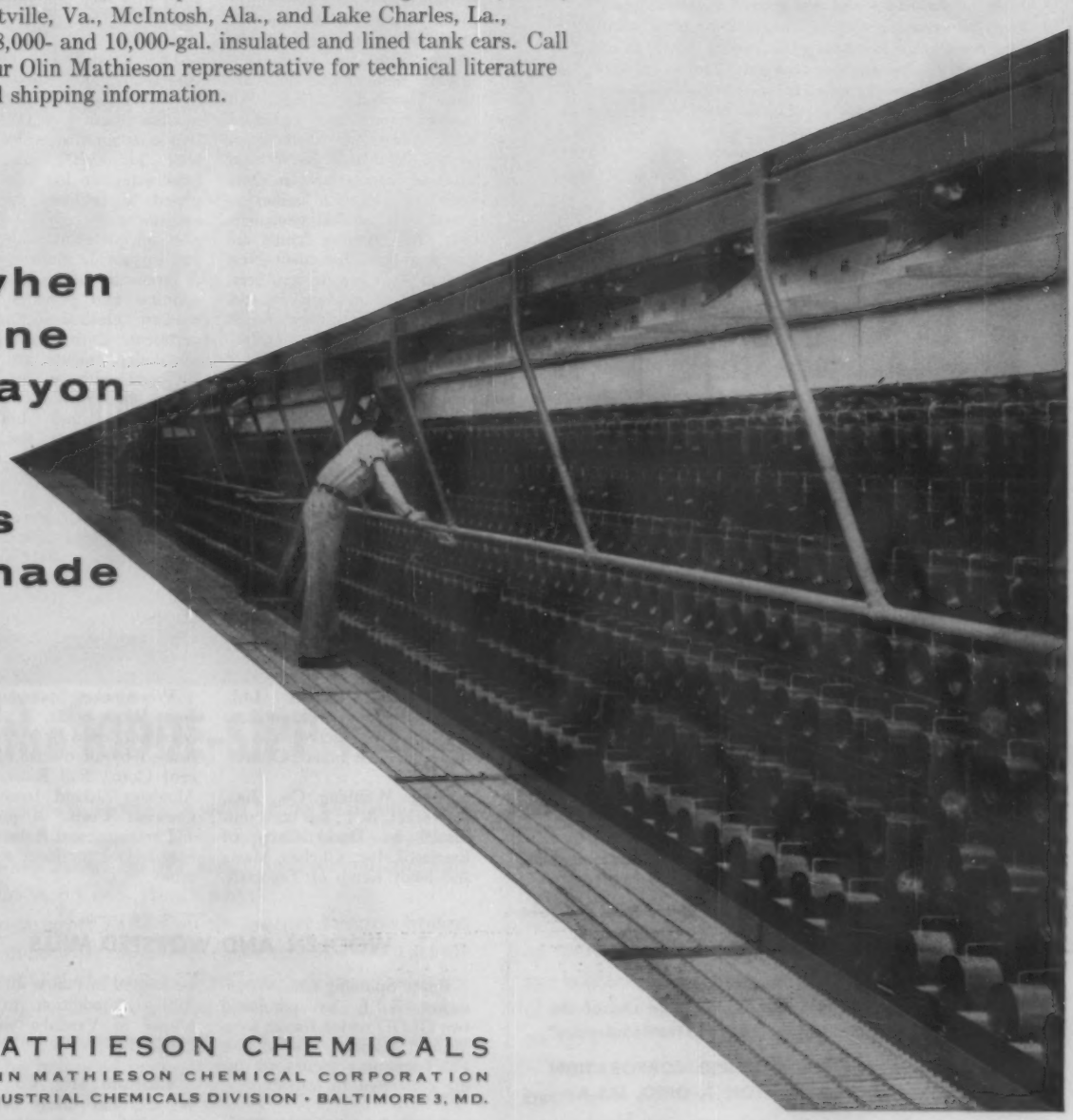
Four plants from the Great Lakes to the Gulf deliver Mathieson Caustic in the quantity and quality specified, shipped on precise schedules to meet your operating requirements.

For rayon, special grades and high purity caustic are available. Caustic shipments come from Niagara Falls, N. Y., Saltville, Va., McIntosh, Ala., and Lake Charles, La., in 8,000- and 10,000-gal. insulated and lined tank cars. Call your Olin Mathieson representative for technical literature and shipping information.

## when fine rayon is made



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**ORGANICS:** Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde • Methanol Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol • Surfactants



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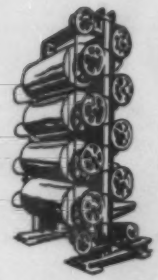
# Now, Drying Cylinders are Cleaned Thoroughly, Rejects Reduced



To clean its copper and stainless steel dyed fabrics dryer, one mill was accustomed to use caustic – applied with a cloth on a broom. Only the lowest four "cans" could be washed – the rest proved inaccessible.

Now, by spraying Oakite Composition No. 24 solution with the Oakite Hot-Spray Unit, every "can" is cleaned thoroughly – even the topmost. Traces of dye and bleach are easily, quickly removed – cylinders restored clean as new – solving also the fabrics reject problem.

Ask your nearby Oakite representative for further money-saving details. Write Oakite Products, Inc., 52D Rector Street, New York 6, N. Y.

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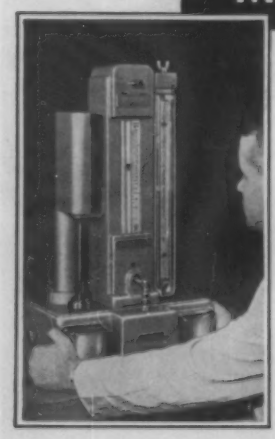

- Speeds up checking two to three times
- Prevents operator fatigue
- Less chance for inaccurate reading
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- Micronaires now in use can be automated
- New automated models now available

For NEW Book "Advantages and World-Wide use of the Micronaire in all segments of the Cotton and Textile Industries"

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# NEWS ABOUT MILLS

## COTTON MILLS

**Borden Mfg. Co.**, Goldsboro, N. C., has installed 32 deliveries of Whitin Even-Draft drawing. The company has also replaced the original two-process roving with a single process utilizing 18 Whitin roving frames. Twelve of these are 10x5 102-spindle frames, four are 10x5 108-spindle frames, and two are 12x6 76-spindle frames. All roving frames are equipped with Adamstop. Forty-seven of the company's 83 Whitin spinning frames have recently been equipped with Norlander-Young Super-Draft changeover. All spinning frames are equipped with Pneumafil. New cleaning equipment has been installed throughout all departments, and uniform humidity is controlled in the spinning room with a Parks-Cramer air changer. The mill is equipped with eight 100-spindle Foster winders and three 100-spindle Universal winders.

**Cone Mills Corp.'s** Edna Plant, Reidsville, N. C., has purchased 40 deliveries of Whitin Even-Draft drawings. They will carry 16x42-in. cans. The mill is also adding six cards, bringing the total to 120, and equipping all cards with 18x42-in. McDonough Universal card coilers.

**Dominion Fabrics Ltd.**, Dunnville, Ont., will merchandise all its products in the future under one brand, Camtex.

**Hope Webbing Co., Inc.**, Pawtucket, R. I., has been purchased by David Casty of Everlastik, Inc., Chelsea, Mass., and Rudy Kemp of Tapecraft, Inc., Anniston, Ala. The purchase was made from Massachusetts Mohair Plush Co., New York, N. Y. The company will start immediately changing from a one-shift operation to a two- and three-shift operation.

**The Kendall Co.**, Albertville Plant, Albertville, Ala., is undergoing an extensive modernization and rehabilitation program that will cost at least $1,500,000. A 42-ft. brick extension has been completed to facilitate the rearrangement of the 620 looms to give adequate working space and to provide more flexibility in producing fabrics. The plant addition also provides for a modern cloth-inspection department. Both weaving and cloth departments are being equipped with an air-change system to provide controlled temperature and humidity. Modernization of the other units within the plant is also planned.

**Va-Do Fabrics, Inc.**, Centre, Ala., has added $300,000 in new equipment since the Becheck Co. bought the plant two years ago. The front of the building has been remodeled and new offices completed.

**Woonsocket Sponging Co., Inc.**, Woonsocket, R. I., has been purchased by a new firm headed by an official of Crescent Corp., Fall River, Mass. Abraham Ziskind, treasurer of Crescent Corp., is president and treasurer and Robert Glashow is vice president and secretary.

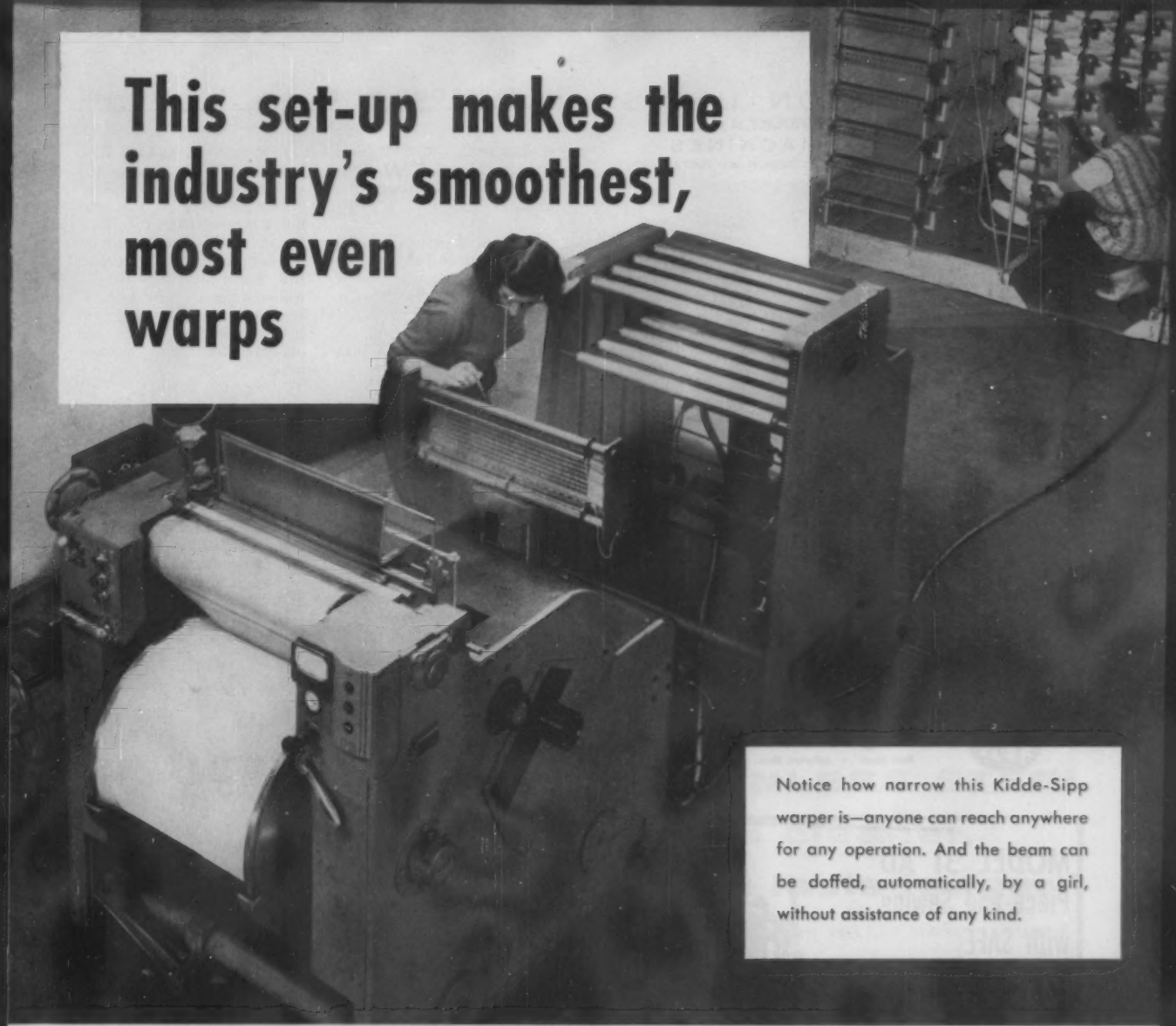
## WOOLEN AND WORSTED MILLS

**Bonte Spinning Co.**, Woonsocket, R. I., has purchased two GLOD roving frames from Whitin Machine Works. Five FW3 spinning frames are being converted to long-draft.

**Caron Spinning Co.**, Rockford, Ill., has formed a wholly owned subsidiary, Caron Spinning Co. of Wisconsin, to handle buying and warehousing of wool. Warehousing will be located in Prairie du Chien, Wis., in addition to warehouses in Vandalia and Rochelle, Ill.

**Chatham Mfg. Co.**, Elkin, N. C., has taken over the manufacture and sale of all blankets formerly sold by North Star Woolen Mills Co., Sanford, Me., under its North Star label. The company has also purchased Springfield

# This set-up makes the industry's smoothest, most even warps



Notice how narrow this Kidde-Sipp warper is—anyone can reach anywhere for any operation. And the beam can be doffed, automatically, by a girl, without assistance of any kind.

## it's the KIDDE-SIPP warper with accumulator and creel

The smoothest, most even warp beams available today are being turned out by Kidde-Sipp warpers . . . particularly when backed up by a Kidde-Sipp accumulator and a Kidde-Sipp Creel. Here's why:

Yarn is never scuffed on the warper because brakes on the measuring roll, compression roll, and beam are all synchronized electrically. Furthermore, yarn builds up evenly because the compression roller has 2 hydraulic cylinders, one at either end (instead of just one in the center). The balanced pressure that results gives you perfectly even build-up of yarn. And the hydraulic cylinders produce uniform cushion pressure so that the compression roller will not chatter or bounce.

The accumulator is electrically synchronized with the warper, so that, when the yarn must be backed off to recover a broken end, proper tension is maintained. And even the heaviest packages won't sag out of alignment on the versatile Kidde-Sipp Creel. New, stronger package holders and adapters are the reason. They are made of aluminum, which also puts a stop to rust rubbing off on the yarn.

There are a lot more reasons why you get a better beam with Kidde-Sipp Warpers, Creels and accumulators. Find out more about them by writing to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

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SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

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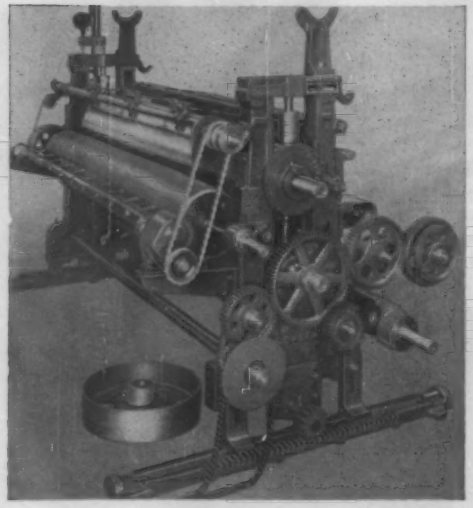
*WILL INCREASE the EFFICIENCY of your*
PERALTA® MACHINES
CONVERT NOW TO OUR NEW DESIGN BY INSTALLING:

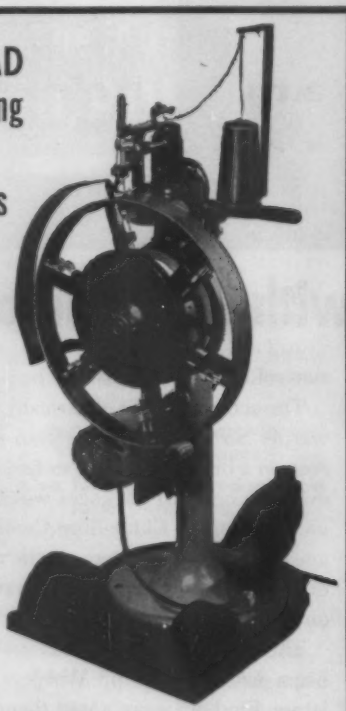


- Off-Set Roll Arrangement
- Doffing Device Attachment
- Hydraulic Pressure

Write us regarding our new type
DOUBLE RUB TAPE CONDENSER
for adaptation to woolen cards

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P. O. Box 25

MODEL 31 AD
Piece-end Sewing
with SAFE
Retractable Pins



20" dia. cloth wheel with 6 pairs of pins retracted by cam for automatic cloth stripping. Retracted pins are safe. Heavy duty gear type sewing head. Single chain stitch. Wide range of stitch adjustments. Motor drive.

DINSMORE MANUFACTURING CO.
Box 267 Salem, Mass.

## NEWS ABOUT MILLS Continued

Woolen Mills Co., Springfield, Tenn., and the blanket business of F. C. Huyck & Sons, Rensselear, N. Y.

**Hartford Woolen Co.**, Hartford, Vt., which had closed on April 30 of this year, has reopened. A. G. Dewey Co., Quechee, Vt., has taken over operation. The mill will provide yarn for the firm's plant in Enfield, N. H.

**J. P. Stevens & Co., Inc.**, New York, N. Y., has acquired all outstanding capital stock of Forstmann Woolen Co. and Julius Forstmann & Co., Inc., Passaic, N. J. The acquisition is based on the understanding that Forstmann Woolen Co. will continue its current manufacturing, merchandising, and selling operation under the present Forstmann management.

### SYNTHETICS MILLS

**Monarch Textiles, Inc.**, Philadelphia, Pa., has leased an additional 5,000 sq. ft. in the former Bromley Mills building. The firm will use the space for the installation of additional machinery.

**Schwarzenbach Huber Co.**, New York, N. Y., has become the sole owner of all outstanding capital stock of Stehli & Co., Inc., New York, N. Y. The agreement concerns only the American operations of the two world-wide organizations and in no way affects their relationship in other world markets. Stehli & Co., Inc., will, for the time being, at least, continue as an entirely separate entity.

### KNITTING MILLS

**William Carter Co.**, Needham Heights, Mass., has announced that the company will double the manufacturing capacity at its mill in Thomaston, Ga. It will expand the bleaching, dyeing, printing, and warehouse facilities of its Barnesville plant by adding 100,000 ft. of floor space, at an estimated cost of $800,000.

**Grey Hosiery Mill**, Bristol, Va., has planned a $230,000 expansion program, including an addition to the plant. The company has purchased $120,000 worth of seamless-hosiery knitting equipment.

**Weldrest Hosiery Ltd.**, Mount Dennis, Ont., has its new branch plant on Lansdowne St., Perth, Ont., in operation. A one-story, brick structure, it has 7,000 sq. ft. of floor space and will employ 40 people.

**Wilkes Hosiery Mills**, North Wilkesboro, N. C., has been reopened under new ownership and operations have been resumed on a limited scale. The plant had been purchased from Hanes Hosiery Mills, Winston-Salem, N. C., by Harriss & Covington Mills, High Point, N. C.

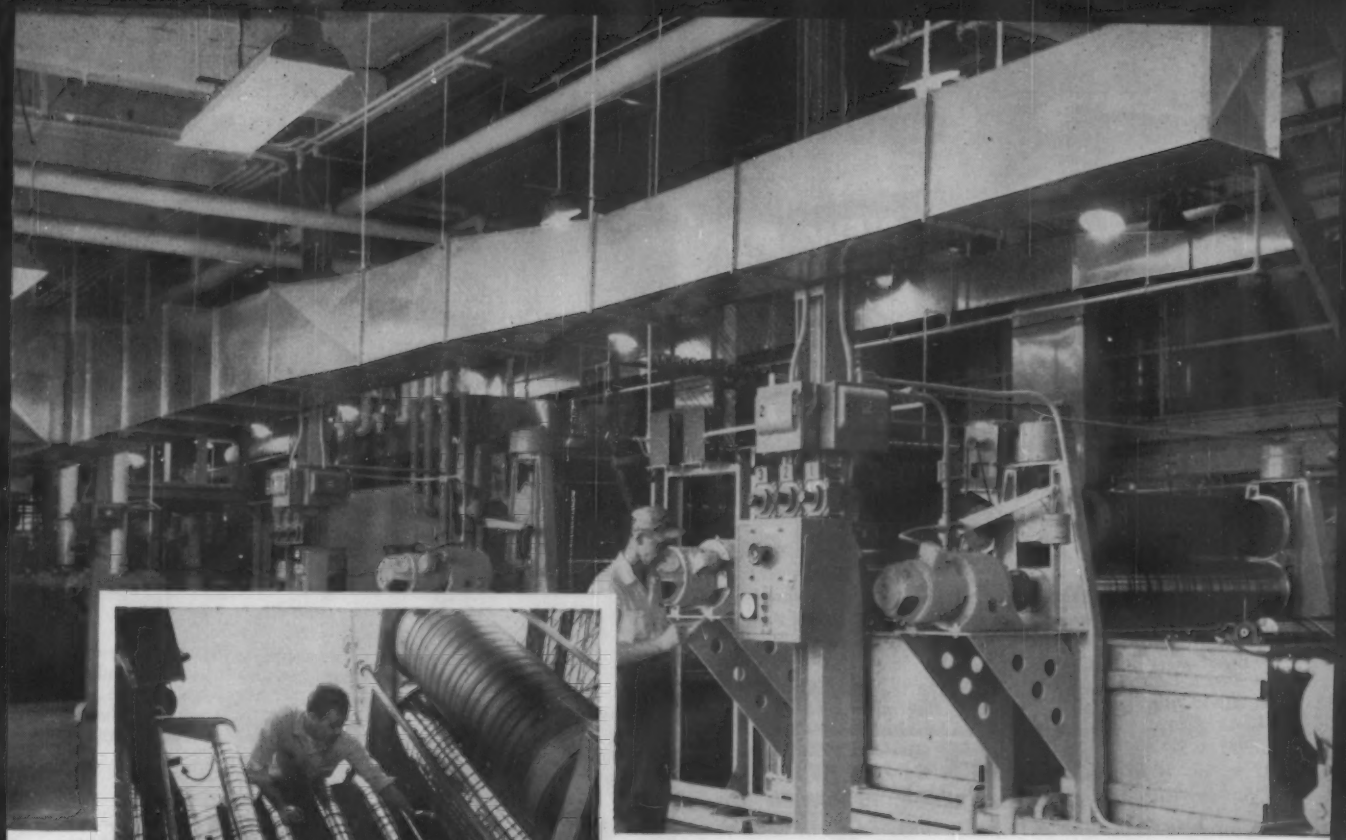
### DYEING AND FINISHING PLANTS

**Bryant Finishing Co.**, West Warwick, R. I., plans to start construction this summer on an addition to its present plant. Modernization plans include installation of new tenter frames.

**Fair Lawn-Richmond Finishing Co.**, Richmond, Va., has closed down except for completing dyeing and finishing work in process. The plant was equipped to turn out about 1,000 pieces a day of synthetics fabrics.

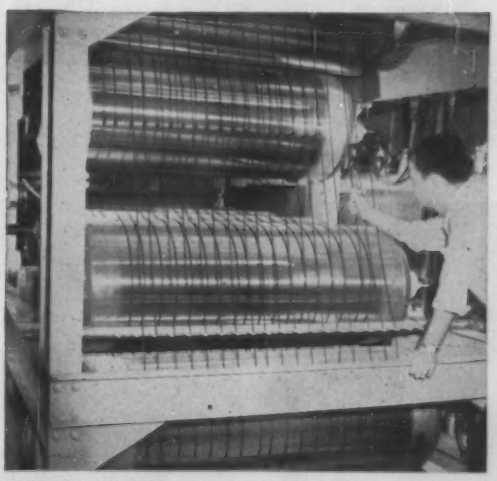
**Universal Dye Works, Inc.**, Philadelphia, Pa., has completed arrangements to license manufacturers, converters, and dyers of sweaters of acrylic fibers to finish their garments with UT-Formula, a finish developed by Universal that makes garments of Orlon and Acrilan pill-resistant.

**Watuppa Finishing Corp.**, Fall River, Mass. has added four new corduroy-cutting machines and six new Hinnekens steel dye jigs. The plant is now equipped with eight high-speed cutting machines. A new pad and drying range, used for automobile seat-cover materials, has also been set up.



Continuous dyer. Creel stands are out of picture at right.

In boil-out section, warp passes over 8 Stainless rollers.



36 Stainless Steel dry cans are heated by 45 psi steam.

# "STAINLESS STEEL is cleaner, and it lasts longer"

SAYS LARGE SOUTHERN TEXTILE MANUFACTURER.

The plant shown here manufactures denim. In 1956, the company installed a large (20 ball warp) 100% continuous steam process for vat dyeing. There are only three other machines like it in the United States, and in all of them, Stainless Steel plays a very important role.

With the old iron kettles, dyeing was limited to one shade, because of the extreme difficulties encountered in cleaning. The new Stainless equipment can be simply flushed out and it is clean enough for the new color. The pictures tell most of the story.

Spokesmen for the company say that they intend to use Stainless Steel for all new equipment and any replacements in the older dye department. "Stainless Steel is cleaner, and it lasts longer," is the way they sum it up.

When *ordering* Stainless Steel equipment, you can be sure of service-tested quality if you specify *USS* Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
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## USS STAINLESS STEEL

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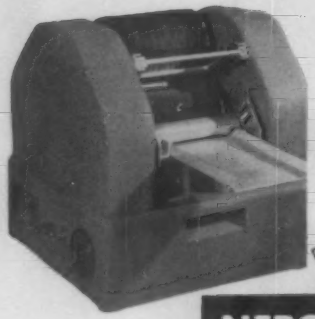
UNITED STATES STEEL



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Now you can avoid costly guess-work on the nepping quality of cotton. This high precision instrument simulates the manufacturing phases and measures the fiber's nepping potential.

*Originally* developed by N. C. State College School of Textiles under contract with U. S. Dept. of Agriculture. *Now* redesigned and re-engineered to meet rigid standardization specifications.

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# NEWS ABOUT MEN

**Edward L. Burnham** has been elected a director of Dacy, Inc., Rocky Mount, S. C.

**Maurice L. Clemence** has been named a director of The Kendall Co., Walpole, Mass.

**John C. Cook** has been appointed plant manager of Georgia Rug Mill, Summerville, Ga.

**W. R. Cooke** has been appointed manager of Barbour Mill, Paterson, N. J.

**Arthur I. Darman** has been elected a director of Dacy, Inc., Rocky Mount, N. C.

**Dwight J. Davis** has been elected assistant vice president of Cone Mills, Inc., New York, N. Y.

**Elliot B. Doft** has been appointed assistant to the president of Princeton Knitting Mills, Watertown, Conn.

**Howard E. Eldridge** has been elected vice president and a director of Jomac, Inc., Philadelphia, Pa.

**David J. Fleming, Jr.,** has been elected assistant vice president of Cone Mills, Inc., New York, N. Y.

**Max Greenstone** has resigned from United Piece Dye Works, Lodi, N. J., to join Allied Textile Printers, Paterson, N. J.

**Nelson Gwinn, Jr.,** has been transferred from the quality-control and standards department at the Abney Mills' plant, Woodruff, S. C., to Brandon Mills, Greenville, S. C.

**N. F. Haas** has been named a director of Clinton Woolen Mfg. Co., Clinton, Mich.

**George H. Hightower,** vice president of Thomaston Mills, Thomaston, Ga., has been named president of the Cotton Manufacturers Association of Georgia.

**Maurice S. Holt** has been named a director of Copland Converting & Finishing Co., Burlington, N. C., to fill the vacancy created by the death of Jerry D. Strader, Sr.

**Monroe Hornsby** has resigned as vice president of Fulton Bag & Cotton Mills, Atlanta, Ga.

**Herbert E. Kegelman** has been elected president of Linen Thread Co., Inc., New York, N. Y., and president of Dolphin Jute Mills, Paterson, N. J.

**E. Bradford Keith** has been elected a director of Dacy, Inc., Rocky Mount, N. C.

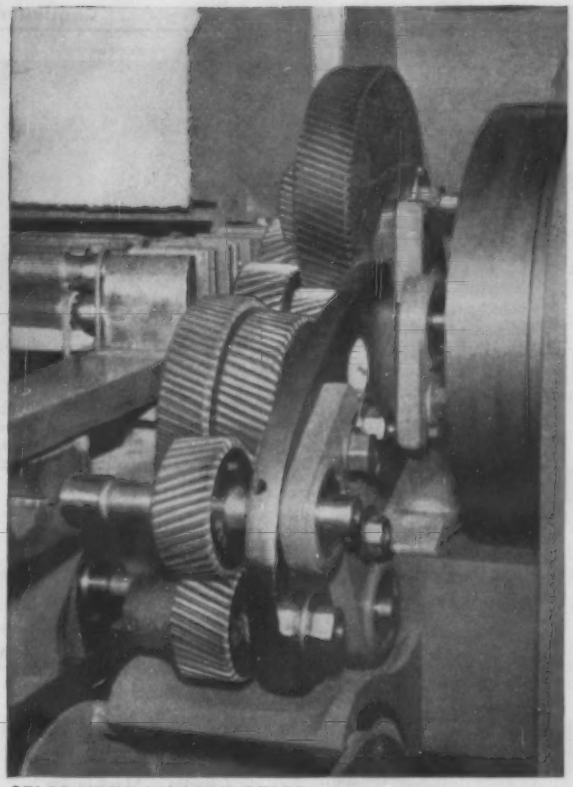
**William M. Klothe** has been elected a vice president of Pellon Corp., New York, N. Y.

**John J. Love** has been

**FRANK C. MAWBY, elected a vice president of Bigelow-Sanford Carpet Co., Inc., New York, N. Y., will head the Company's Hartford Rayon Div. Mr. Mawby formerly was president of Bates Mfg. Co., Lewiston, Me.**

**ARTHUR F. McLEAN has joined Bradford Dyeing Association (USA), Bradford, R. I., as plant manager. Mr. McLean formerly served as assistant manager of Glen Lyon Print Works, Phillipsdale, R. I.**

# Put strength, long life, silence into gears, couplings, loom parts with C-D-F Celoron® plastic



**CELORON-TO-CELORON GEARS** in drawing rolls made by Ideal Industries, Inc., Bessemer City, N. C. These are helical-cut gears—the toughest to machine, requiring the toughest material. Celoron is it. Other Celoron parts for this application are shown below, top right.

**WORK MIRACLES IN TEXTILE MACHINERY**—with this amazing golden plastic material! Celoron gears help eliminate noise, reduce wear on mating metal gears; and even the roughest-used helicals last . . . and last . . . and last.

**HIGH MECHANICAL STRENGTH.** Typical Celoron strengths: tensile, 6,500 psi; flexural, 10,000 psi; compressive, 25,000 psi; shear, 8,500 psi. Dimensionally stable and readily machined, Celoron fills the bill where costly metal parts fail.

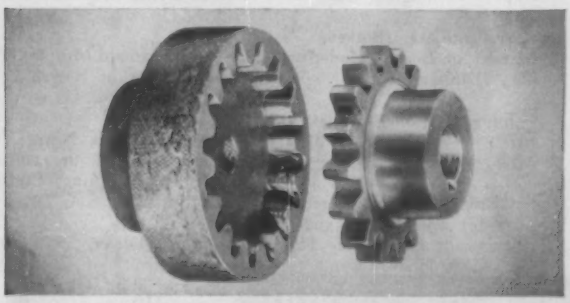
**ELECTRICAL INSULATION VALUE.** Celoron is a non-conductor with high electrical insulation value. It makes ideal mechanical-electrical parts. Celoron couplings effectively insulate motors from driven machinery.

**BETTER SERVICE FOR THE SOUTH.** Besides having sales engineers in all principal cities, C-D-F maintains a specialized plant-warehouse stocking Celoron parts and Diamond Fibre receptacles for the Southern textile industries at 834 Hayne St., Spartanburg, S. C. Your Celoron gear blank, coupling, or loom part will reach you fast from this wide-awake distribution center.

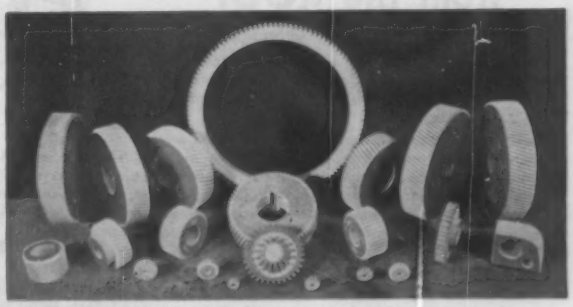
Keep in close touch with *your* C-D-F sales engineer—a good man to know!

**CONTINENTAL-DIAMOND FIBRE**

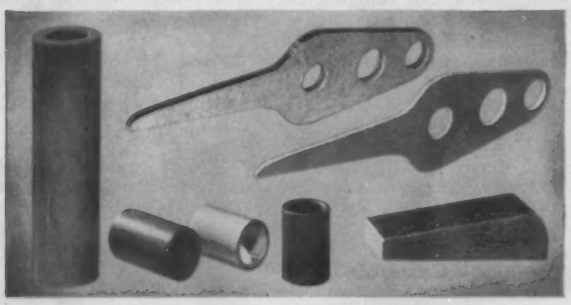
A SUBSIDIARY OF THE Budd COMPANY • NEWARK 55, DEL.



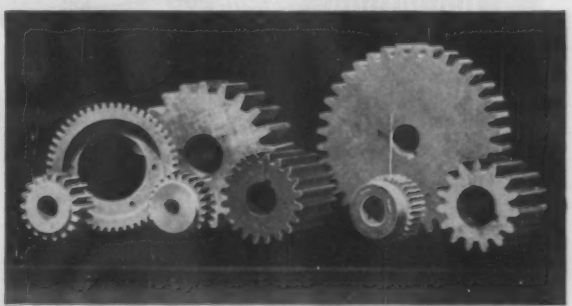
**LOW-COST, EASILY-ASSEMBLED** C-D-F Celoron flexible coupling transmits power smoothly, efficiently, silently . . . needs no lubrication, works on vertical or horizontal shafts.



**PRECISELY MACHINED KEYWAYS** help keep these Celoron parts silent and strong in the Ideal drawing rolls illustrated in top photograph. Note wide range of sizes and shapes.



**YEARS OF SERVICE,** freedom from maintenance, resistance to moisture—that's what these C-D-F parallel plugs, knife guides, binder bushings give the mill operator.



**STRONG, SILENT CELORON** makes both drive and driven gears. Metal gears don't develop excess play, last longer when they mate with Celoron. Many applications are 100% Celoron-geared.



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*effectively, efficiently, economically*

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## NEWS ABOUT MEN — Continued

named manufacturing manager of Burlington Narrow Fabrics Co., South Hills and White Sulphur Springs, W. Va.

**Roy H. Niebling** has been elected executive vice president of Sidney Blumenthal & Co., Inc., New York, N. Y.

**Donald B. Tansill** has been elected president of Wamsutta Mills, New Bedford, Mass. Mr. Tangill is also president of M. Lowenstein & Sons, Inc., New York, N. Y.

**Alexander W. Westreich** has been elected president of Pellon Corp., New York, N. Y.

CARL F. GRAM has been appointed director of rayon manufacturing for Hartford Rayon Div., Bigelow-Sanford Carpet Co., Inc., New York, N. Y.

Textile World

## OBITUARY

**James Lloyd Braman**, 75, retired chairman of the board of governors of F. C. Huyck & Sons, Albany, N. Y.

**James R. Bulitt, Jr.**, 51, director, research division of E. I. du Pont de Nemours & Co., Inc.'s Fabrics and Finishes Dept., Wilmington, Del.

**William D. Burkey**, 77, founder of Burkey Underwear Co., Hamburg, Pa.

**Julius H. Cohen**, 49, executive for Queens Knitting Mills, Philadelphia, Pa.

**Charles S. Cole**, 71, retired president and former general manager of Fabric Fire Hose Co., Sandy Hook, Conn.

**Joe Dubrof**, 52, general manager of Carolyn Chenilles, Inc., Dalton, Ga., and Sweetwater Rug Co., Ringgold, Ga.

**Frederick T. Entwistle**, 56, assistant manager of the planning division of the Textile Fibers Dept., Du Pont, Wilmington, Del.

**Murray A. Greenblatt**, 47, former secretary-treasurer, Perfect Thread Co., New York, N. Y.

**Alex I. Greenhill**, 63, president of Trim-Knit, Inc., New York, N. Y.

**Nelson N. Harte**, 57, general superintendent of Morgan Cotton Mills, Laurinburg, N. C.

**Charles MacKinnon**, 57, first vice president of Plymouth Cordage Co., Plymouth, Mass.

**George L. Melton**, 64, formerly superintendent of the former Cutter Mfg. Co., Rock Hill, S. C.

**Newell Barnard Murphy**, 59, vice president of Riegel Textile Corp., Trion, Ga.

**Kenneth Finch Nims**, 70, formerly head of the cotton department of Springs Cotton Mills, Fort Mill, S. C.

**John B. Oliver**, 58, retired superintendent of Piedmont Mills, East Point, Ga.

**Britt Ware Robinson**, 72, retired superintendent of Callaway Mills' Milstead Plant, LaGrange, Ga.

**Frank M. Stevenson**, 58, head of Globe Dye Works' warp-dyeing department, Philadelphia, Pa.

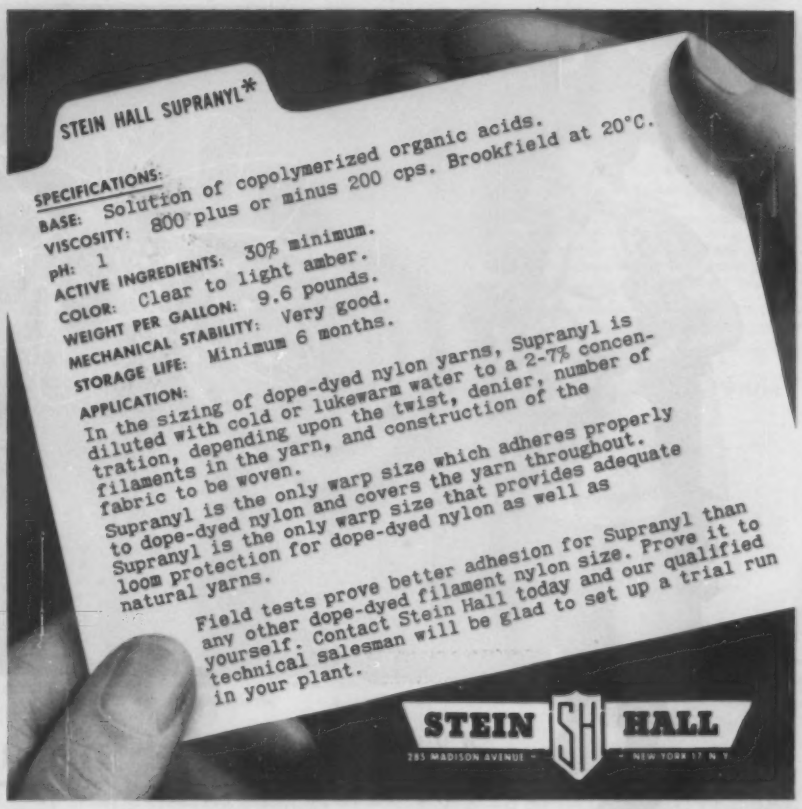
**Fred W. Symmes**, 78, 1940-1941 president of American Cotton Manufacturers Association, and longtime textile leader.

**Dr. Willem J. D. van Dobbenburgh**, 55, rayon-operation manager for American Enka Corp., Enka, N. C.

# *Eliminate broken filaments on Dope-Dyed Nylon* with **STEIN HALL SUPRANYL**

**Supranyl possesses unusual adhesion properties for dope-dyed yarn where the normal polyacrylic sizes fail to render adequate loom protection against broken filaments. Light amber in color, it is readily removable in the scouring bath.**

***Above material extracted from Stein Hall Technical Bulletin. Available on request.**


STEIN HALL SUPRANYL*
SPECIFICATIONS:
BASE: Solution of copolymerized organic acids.
VISCOSITY: 800 plus or minus 200 cps. Brookfield at 20°C.
pH: 1
ACTIVE INGREDIENTS: 30% minimum.
COLOR: Clear to light amber.
WEIGHT PER GALLON: 9.6 pounds.
MECHANICAL STABILITY: Very good.
STORAGE LIFE: Minimum 6 months.
APPLICATION:
In the sizing of dope-dyed nylon yarns, Supranyl is diluted with cold or lukewarm water to a 2-7% concentration, depending upon the twist, denier, number of filaments in the yarn, and construction of the fabric to be woven.
Supranyl is the only warp size which adheres properly to dope-dyed nylon and covers the yarn throughout. Supranyl is the only warp size that provides adequate loom protection for dope-dyed nylon as well as natural yarns.
Field tests prove better adhesion for Supranyl than any other dope-dyed filament nylon size. Prove it to yourself. Contact Stein Hall today and our qualified technical salesman will be glad to set up a trial run in your plant.
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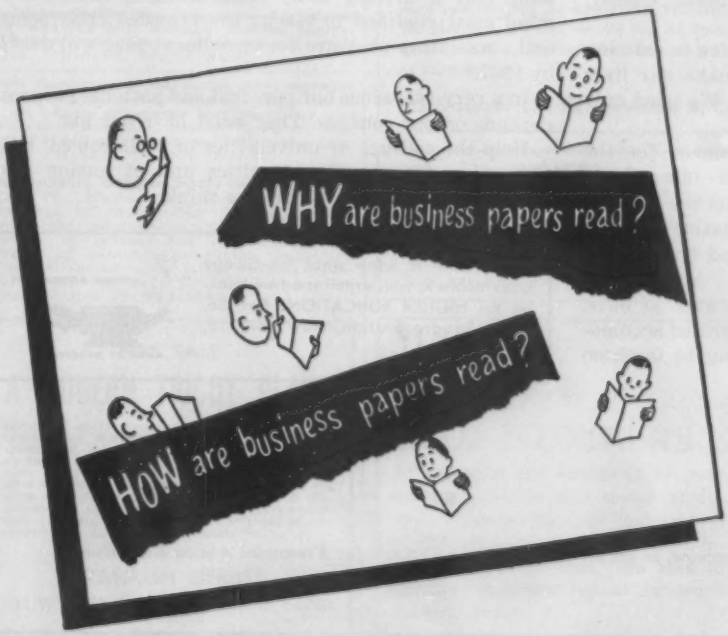


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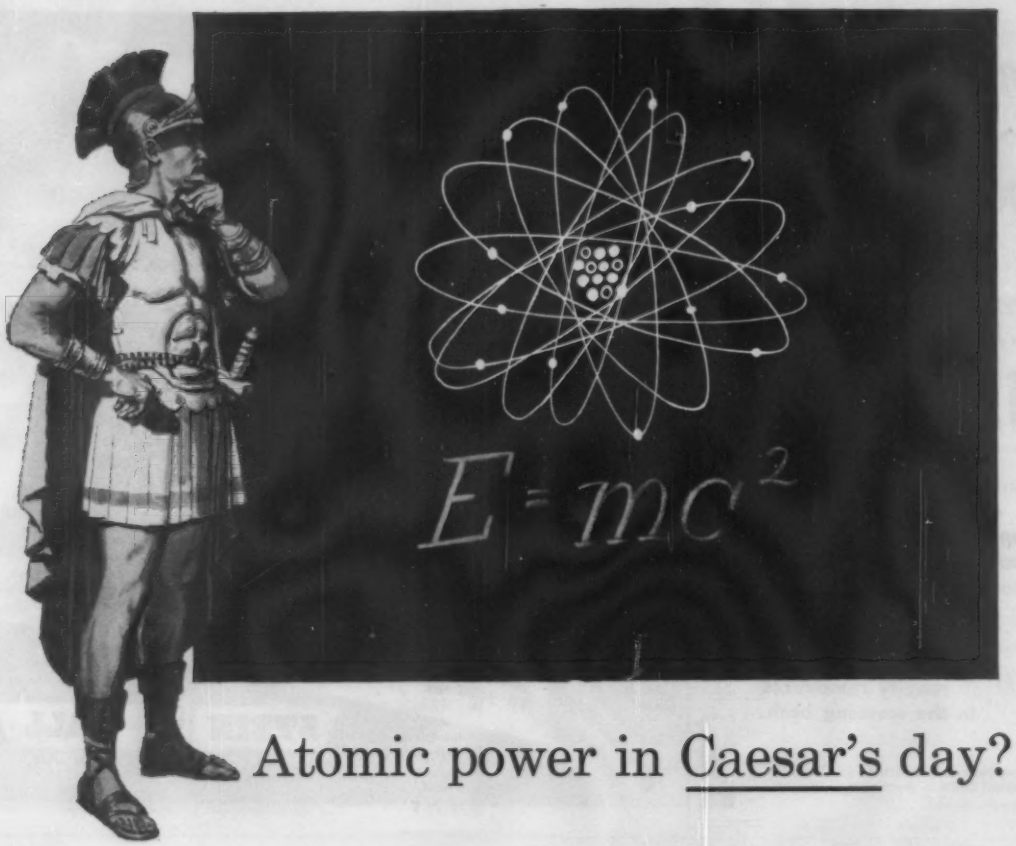


# Atomic power in Caesar's day?

## *Certainly!*

It was there, in the ground, in the air and water. It always had been. There are no more "raw materials" today than there were when Rome ruled the world.

The only thing new is knowledge . . . knowledge of how to get at and rearrange raw materials. Every invention of modern times was "available" to Rameses, Caesar, Charlemagne.

In this sense, then, we have available *today* in existing raw materials the inventions that can make our lives longer, happier, and inconceivably easier. We need only *knowledge* to bring them into reality.

Could there possibly be a better argument for the strengthening of our *sources* of knowledge—our colleges and universities? Can we possibly deny that the welfare, progress—indeed the very *fate*—of our nation depends on the quality of knowledge generated and transmitted by these institutions of higher learning?

It is almost unbelievable that a society such as ours, which has profited so vastly from an accelerated accumulation of knowledge, should allow anything to threaten the wellsprings of our learning.

## *Yet this is the case*

The crisis that confronts our colleges today threatens to weaken seriously their ability to produce the kind of graduates who can assimilate and carry forward our rich heritage of learning.

The crisis is composed of several elements: a salary scale that is driving away from teaching the kind of mind *most qualified* to teach; overcrowded classrooms; and a mounting pressure for enrollment that will *double* by 1967.

In a very real sense our personal and national progress depends on our colleges. They *must* have our aid.

Help the colleges or universities of your choice. Help them plan for stronger faculties and expansion. The returns will be greater than you think.

If you want to know what the college crisis means to you, write for a free booklet to: HIGHER EDUCATION, Box 36, Times Square Station, New York 36, New York.

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### POSITIONS WANTED

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**Plant Manager—A successful plant manager** will be available September 1. Experienced in all phases of cotton manufacturing and finishing. Phenominal success in cutting unit costs, handling of personal and labor relations. PW-5324, Textile World.

**Two capable German Photo-engravers both** aged 22, single, are ready to accept contracts in the United States. Special professional attainments and capacities: engraving of screen—and effect-roller; engraving of pantographic plates; engraving of joints; versed in the latest working methods. Apply box 2138 CH, Orell Fussli-Annonces, Zurich 22, Switzerland.


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26—Platt Cards, revolving flats, 40" wide, 27" doffers, 14" coilers, 100/110 wire, motor driven
4—Whitin Cards, roller tops, 40" wide, 27" doffers, 12" coilers
32—Del. Reiter Drawing Frames, 3 over 4 roll, 8 dels. bicoil draft, 12" coiler
32—Del. Platt Drawing Frames, conventional, 14" coiler
1—Warner-Swasey Quad Pin Drafter, 14" coiler
1—Holdsworth Gill Recorder, can or ball creel, 14" coiler
2—Reiter Gill Boxes, 12" coiler, motor
3—Reiter Slubbers, 11 x 4½, 90 spdls. Roth Long Draft
4—Platt Slubbers, 9 x 4½, 132 spdls. Casablanca Long Draft
8—Reiter Spinning Frames—276 Spdls., Roth L. D., 3½" ga., 9" traverse, tape drive, Pneumafil, 10 hp motor

16—Platt Spinning Frames, 272 spdls, Casablanca Long Draft, ¾" gauge, 9" traverse, tape drive, Pneumafil
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Warpers • Winders & Quillers • Looms

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24—C & K, 72" R. S., 4 x 4
24—C & K, C-4, 68", 4 x 1 Auto
85—C & K, S-5, 56" R. S.
20—UNIVERSAL NO. 50 CONERS, 1953.
S. S. EMULSION ROLLERS, TROUGHS, PINEAPPLE ATTACHMENT

240—DRAPER 46" XD, DIEHL DRIVE JOHNSON SLASHERS
ABBOTT QUILLERS
HERMAS 58" 4-BLADE SHEARER
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COCKER WARPER, SIPP CREEL
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WHITIN AUTO QUILLERS

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1—VV 60" 2 roll quetch
1—VV-2 roll 56" pad
1—VV 90' 66" super tenter frame with housing
1—VV-50"—2 Roll Pad
SS Pails, dippers, batch cans
1 set of 8SS 72" cans
38—SS dye becks 5' to 16'
25—SS Finishing trucks 66" x 43"
10—SS Box trucks 60" x 36" x 30"
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4—Merrow 60D3b
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1—Schofield 72" Carding Picker, 1950
3—Foster 102, 80 Sp. Wood Cone Winders, 1948
1—Abbott 50 Sp. Quill Winder w/Loader, 1954
1—P. & W. "Vertitex" Cloth Exam. Machine, 1952
2—Hunter 66" Acid Rinse Bowls, 1948
1—Gessner 72" x 36" Semi Decatur, 1948

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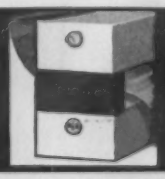

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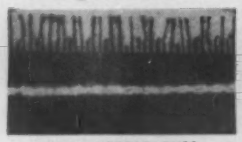

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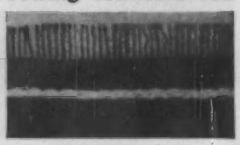

NO NEEDLE CUTS

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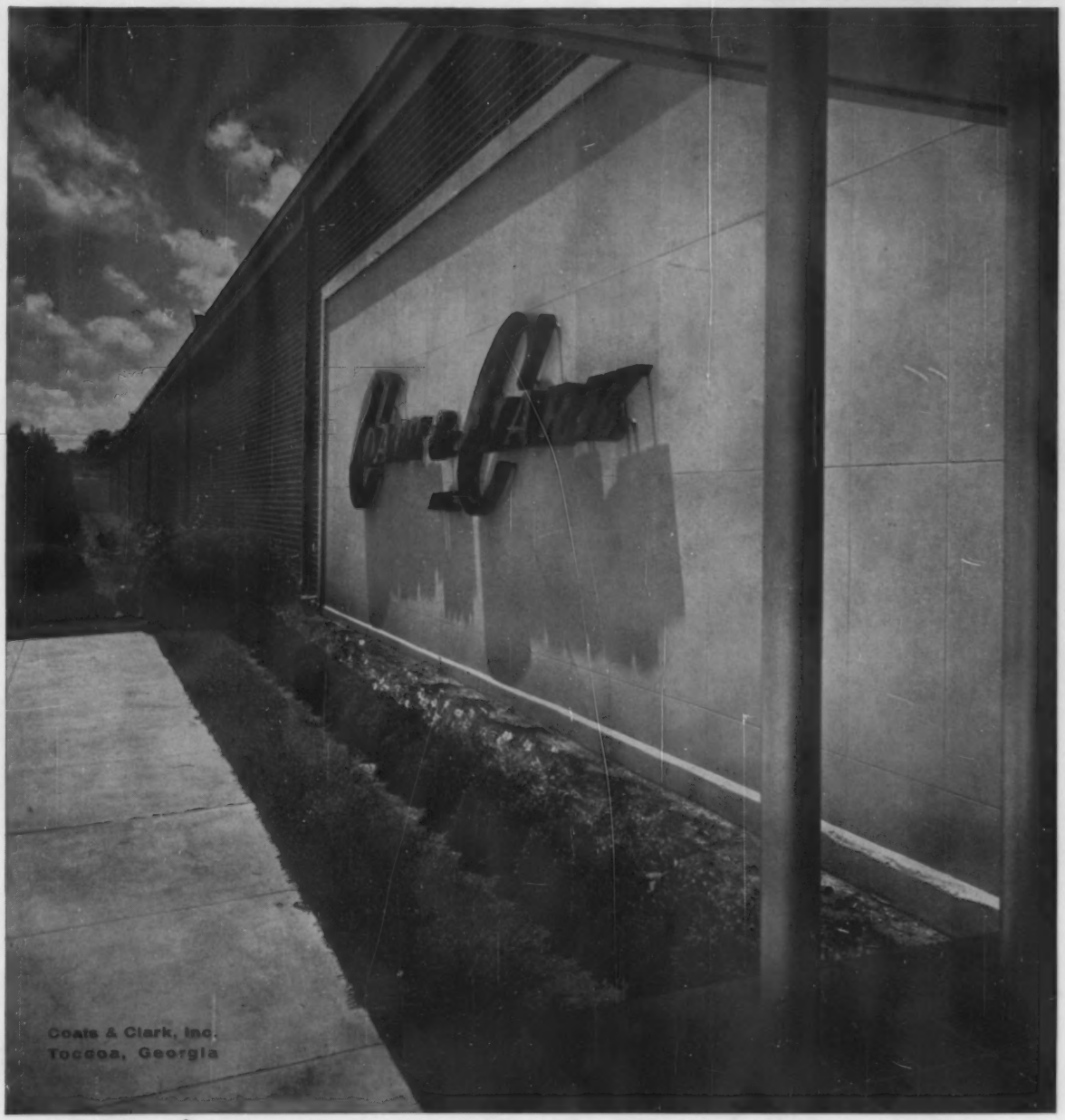


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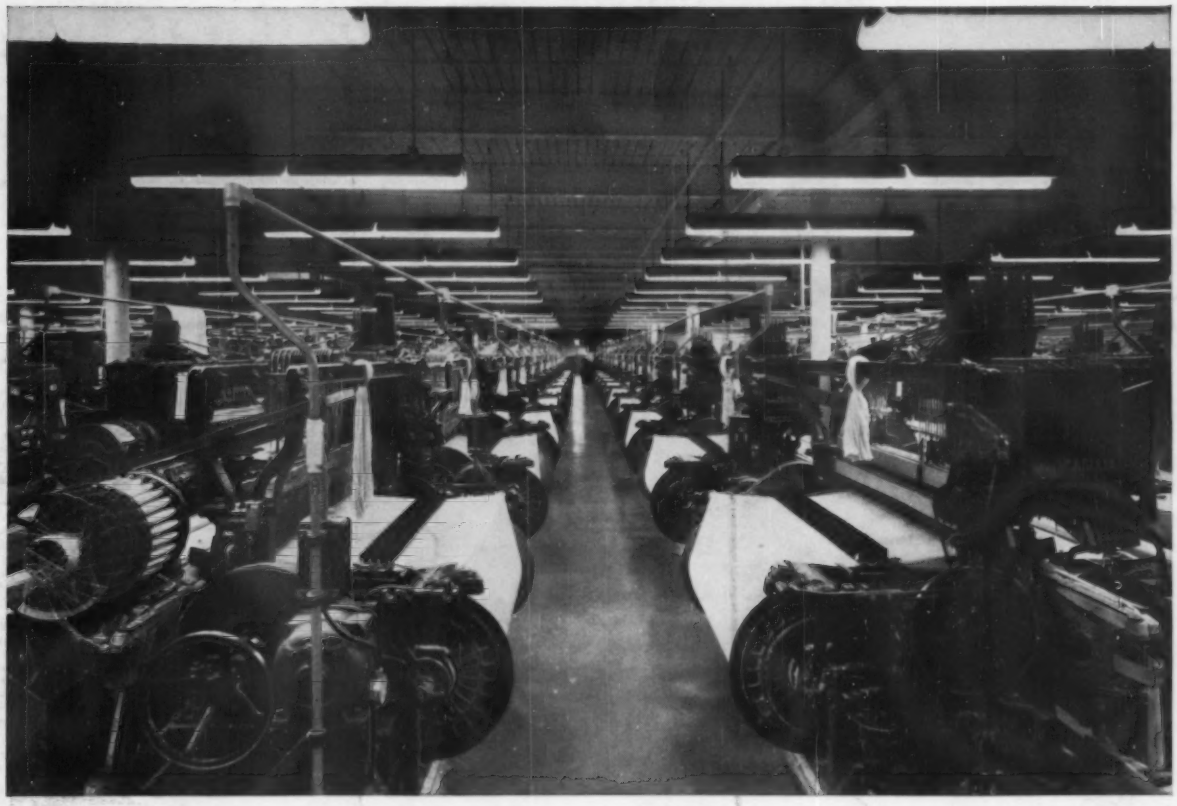

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